

PP. 2465

ῬΑΤΑΑΣ ΟΥΡΑΝΙΟΣ,
The COELESTIAL ATLAS;

OR, A NEW
EPHEMERIS
For the YEAR of our LORD 1786.

Being the Second after
BISSEXTILE, or LEAP-YEAR.

Wherein are contained
The Heliocentrick and Geocentrick Places of the Planets,
the ECLIPSES of the Luminaries, and other remarkable PHÆNO-
MENA that will happen this Year.

Carefully computed
From the genuine TABLES of Dr. EDMUND HALLEY,
those of Professor MAYER, and other the latest and most correct
ASTRONOMICAL TABLES.

ALSO
A Compleat ALMANACK, containing the FEASTS and FASTS
of the Church of ENGLAND; the Times of the LUNATIONS;
the Rising and Setting of the Sun, Moon, and Planets, &c.

Adapted to the
Meridian and Latitude of the ancient and honourable
CITY of LONDON.

To which are added,
Several useful TABLES: As, a TABLE of the Sun's
semi-diurnal Arcs, by which the Times of the Sun's Rising and
Setting may be known by Inspection, on every Day in the Year, and
in any Part of GREAT-BRITAIN or IRELAND; a TIDE-TABLE,
and a very correct one of the Eclipses of JUPITER's first Satellites;
a TABLE of the Sun's Right-Ascension, and of the exact TABLES of
the most remarkable fixed Stars, according to Mr. FLAMSTEED's
Catalogue; and, lastly, a correct Table of the Latitudes and Longi-
tudes of the most remarkable Places.

By ROBERT WHITE,
Teacher of the Mathematics.

Ος ἀγαθὸς διηγήσεται δοξὰν Θεῶ.

The THIRTY-SEVENTH IMPRESSION.

L O N D O N :

Printed for the Company of STATIONERS; and sold
by ROBERT HORSFIELD, at their Hall, in Ludgate-street.

[Price NINE PENCE stitched.]

Phemerides, &c.

Chronological Notes for the Year 1786.

Golden Number	- - 1	Septuagesima Sunday	Feb. 12
Cycle of the Sun	- - 3	Shrove Sunday	Feb. 26
The Epact	- - 0	Easter Day	Apr. 16
Dominical Letter	- - A	Whit-Sunday	June 4
Number of Direction	- 26	Trinity Sunday	June 11
Roman Indiction	- - 4	Advent Sunday	Dec. 3

Astronomical CHARACTERS explained.

♈ Aries	♋ Cancer	♎ Libra	♏ Capricorn
♉ Taurus	♌ Leo	♍ Scorpio	♐ Aquarius
♊ Gemini	♍ Virgo	♏ Sagitary	♑ Pisces
♄ Saturn	☉ Sol (the Sun)	☾ Luna (the Moon)	☿ Tellus,
♃ Jupiter	♀ Venus	♊ Moon's N. Node	Terra (or
♂ Mars	☿ Mercury	♋ her S. Node	the Earth)
♌ Conjunction when Planets are in the same Sign, Deg. Min. &c.			
* Sextile when 2 Signs dist. Δ Trine when 4 Signs dist.			
□ Quartile when 3 Signs dist. ♄ Opposition when 6 Signs dist			

Of the Four Quarters of the YEAR 1786.

	d	h	m
THE Spring Quarter begins March	-	20	10 29 morn.
The Summer Quarter begins June	-	21	8 29 morn.
The Autumnal Quarter begins September	-	22	10 3 even.
The Winter Quarter begins December	-	21	2 33 aftern.

THE beautiful Planet VENUS will be a Morning Star 'till March the 21st; and after that Time she will be an Evening Star to the Year's End.

JUPITER will be an Evening Star 'till the 17th Day of April. at which Time he becomes a Morning Star; and so continues 'till Nov. 8 h, and after that an Evening Star to the Year's End.

The NAMES of the Learned JUDGES of the LAW.

I. The Right Hon. Lord Thurlow, Lord High Chancellor.

Right Honourable Sir Lloyd Kenyon, Bart. Master of the Rolls.

II. In the } R. H. Wm. Earl Mansfield, L. C. J. Edward Willes, Esq;
K. Bench. } Sir W. H. Ashurst, Knt. Francis Buller, Esq;III. In the } R. H. Alex. Lord Loughborough, L. C. J. Sir Henry Gould, Knt.
C. Pleas. } Sir George Nares, Knt. John Heath, Esq;IV. In the } Sir John Skynner, Knt. L. C. B. Sir James Eyre, Knt.
Exchequer } Sir Beaumont Hotham, Knt. Sir Richard Perryn, Knt.

Pepper Arden, Esq; Attor. General; Alex. M'Donald, Esq; Solic. General.

A TABLE of TERMS and their RETURNS.

Hilary Term begins Jan. 23, ends Feb. 13.

Returns or Effoign-days.		Exc.	Ret.	Ap.	W. D.
In eight Days of St. Hilary,	Jan. 20	21	22	23	Monday
From the Day of St. Hilary in 15 Days,	27	28	29	30	Monday
On the Morrow of the Purification,	Feb. 3	4	5	6	Monday
In eight Days of the Purification,	9	10	11	13	Monday

Easter Term begins May 3, ends May 29.

From the Day of Easter in 15 Days,	May 1	1	2	3	Weda
From the Day of Easter in 3 Weeks,	8	8	9	10	Wedn.
From the Day of Easter in 1 Month,	15	15	16	17	Wedn.
From the Day of Easter in 5 Weeks,	22	22	23	24	Wedn.
On the Morrow of the Ascension,	26	27	28	29	Monday

Trinity Term begins June 16, ends July 5.

On the Morrow of the Holy Trinity,	June 12	13	14	16	Friday.
In 8 Days of the Holy Trinity,	19	19	20	21	Wedn.
In 15 Days of the Holy Trinity,	26	26	27	28	Wedn.
In 3 Weeks of the Holy Trinity,	July 3	3	4	5	Wedn.

Michaelmas Term begins Nov. 6, ends Nov. 28.

On the Morrow of All Souls,	Nov. 3	4	5	6	Monday
On the Morrow of St. Martin,	13	13	14	15	Wedn.
In eight Days of St. Martin,	18	19	20	21	Tuesday
In 15 Days of St. Martin,	25	26	27	28	Tuesday

N. B. No Sittings in Westminster-Hall on Ascension-day, Midsummer-day, and the 2d of February.

The Exchequer opens eight Days before any Term begins, except Trinity, before which it opens but four Days.

Note, That the first and last Days of every Term, are the Days of Appearance.

BIRTH-DAYS of the ROYAL FAMILY.

KING GEORGE III. June 4, 1738	Prince Adolph. Fred. Feb. 24, 1774
Prince of Wales, Aug. 12, 1762	Princess Mary, April 25, - 1776
Prince Frederick, Aug. 16, 1763	Princess Sophia, Nov. 3, - 1777
Prince Wm. Henry, Aug. 21, 1765	Princess Amelia, Aug. 7, - 1783
Prs. Cha. Aug. Mat. Sept. 29, 1766	Queen Charlotte, May 19, 1744
Prince Edward, Nov. 2, - 1767	Prs. Amelia, June 10, - 1711
Prs. Augusta Sophia, Nov. 8, 1768	Prs. Augusta of Brun. Aug. 11, 1737
Prs. Elizabeth, May 22, - 1770	Duke of Gloucester, Nov. 25, 1743
Prince Ernest Augustus, June 5, 1771	Duke of Cumberland, Nov. 7, 1745
Prince Aug. Fred. Jan. 27, 1773	

SOVEREIGNS of EUROPE, their Accession, &c.

Kingdoms, &c.	To whom subject.	When born.	Began to reign.
England, &c.	George III.	June 4, 1738	Oct. 25, 1760
France	Lewis XVI.	Aug. 23, 1754	May 10, 1774
Russia	Catharine II.	May 2, 1729	July 9, 1762
Spain	Charles III.	Jan. 20, 1716	Aug. 10, 1759
Portugal	Mary	Dec. 7, 1734	Feb. 24, 1777
Prussia	Frederic III.	Jan. 24, 1712	May 20, 1740
Denmark & Norway	Christian VII.	Jan. 29, 1749	Jan. 14, 1766
Sweden	Gustavus III.	Jan. 24, 1746	Feb. 13, 1771
Germany	Joseph	Mar. 13, 1741	Aug. 18, 1765
Poland	Stanislaus III.	Jan. 17, 1732	Nov. 25, 1764
Holland	William V.	March 8, 1748	Oct. 11, 1751
Papedom	Pius VI.	Dec. 27, 1717	Feb. 18, 1775
Sardinia	Victor	June 26, 1726	Mar. 20, 1773
Ottoman Empire	Achmet IV.	Nov. 5, 1719	Jan. 21, 1774

The FULL WEIGHT of the Coins, with the LEAST WEIGHT allowed to pass of the Gold Coin.

Wt. allowed.		Full Wt.	SILVER.		Full Wt.
GOLD.	dwt. gr.	dwt. gr.			dwt. gr.
Guinea, - -	5 8	5 9 $\frac{3}{4}$	A Crown, - -	-	79 8 $\frac{1}{4}$
Half Guinea, -	2 16	2 16 $\frac{4}{8}$	Half Crown, -	-	9 16 $\frac{8}{8}$
Quarter Guinea, 1	8	1 8 $\frac{3}{4}$	Shilling, - -	-	3 20 $\frac{3}{4}$
			Six Pence, - -	-	1 22 $\frac{1}{4}$

According to the above proportions it appears, that the value of a lb. of silver is 62 s. or 3 l. 2 s. and of a lb. of gold is 44 $\frac{1}{2}$ guineas, or 46 l. 14 s. 6 d. Also that the oz. of silver is 5 s. 2 d. and the oz. of gold 3 l. 17 s. 10 $\frac{1}{2}$ d. So that the value of the standard gold is 15 times that of the silver, and 1-14th more.

A TABLE of the KINGS and QUEENS of ENGLAND since the CONQUEST.

Kings and Queens	Born A.D.	Began their Reign	Reigned Y. M. D.	Age	Rem. Deaths and Dethroned	Where buried
Will. Conq.	1027	1066 Oct. 14	20 10 26	60	Burst by Leap.	Caen, Norm
Will. Rufus	1057	1087 Sept. 9	12 10 24	43	Slain accidentally.	Winchester
Henry I.	1068	1100 Aug. 2	35 3 29	77		Reading
Stephen	1105	1135 Dec. 1	18 10 24	49		Feverham
Henry II.	1133	1154 Oct. 25	34 8 11	55	Slain with an Arrow.	Fonteveraud
Richard I.	1156	1189 July 6	9 9 0	43		Fonteveraud
John	1165	1199 April 6	17 6 13	50		Worcester
Henry III.	1207	1216 Oct. 19	56 0 28	65		Westminster
Edward I.	1236	1272 Nov. 16	34 7 21	67		Westminster
Edward II.	1284	1307 July 7	19 6 18	43	Dep. & murd.	Gloucester
Edward III.	1312	1327 Jan. 25	50 4 27	65		Westminster
Richard II.	1366	1377 June 21	22 3 8	33		Westminster
Henry IV.	1367	1399 Sept. 29	13 5 20	46	Dep. & murd.	Canterbury
Henry V.	1389	1413 Mar. 20	9 5 11	33		Westminster
Henry VI.	1421	1422 Aug. 31	33 6 4	49		Windfor
Edward IV.	1442	1461 Mar. 4	22 1 5	41	Murder'd. Slain in Battle.	Windfor
Edward V.	1471	1483 April 9	0 2 15	12		Not known
Richard III.	1443	1483 June 22	2 2 0	42		Leicester
Henry VII.	1456	1485 Aug. 22	23 8 0	52	Died of Grief.	Westminster
Henry VIII.	1492	1509 April 22	37 9 6	55		Windfor
Edward VI.	1537	1547 Jan. 28	6 5 8	15		Westminster
Mary I.	1516	1553 July 6	5 4 11	42		Westminster
Elizabeth	1533	1558 Nov. 17	44 4 7	69		Westminster
James I.	1566	1603 Mar. 24	22 0 3	58	Beheaded.	Westminster
Charles I.	1600	1625 Mar. 27	23 10 3	48		Windfor
Charles II.	1630	1649 Jan. 30	36 0 7	54	Abdicated.	Westminster
James II.	1633	1685 Feb. 6	4 0 7	67		St. Germain
Mary II.	1662	1689 Feb. 13	5 10 15	32		Westminster
William III.	1650	1689 Feb. 13	13 0 23	52		Westminster
Anne	1665	1702 Mar. 8	12 4 24	49		Westminster
George I.	1660	1714 Aug. 1	12 10 10	67		Hanover
George II.	1683	1727 June 11	33 4 14	77		Westminster
George III.	1738	1760 Oct. 25	Crowned Sept. 22, 1761.			

Above you view the Rise and Fall of Kings,
 Whose Fate sometimes a useful Lesson brings.
 Well if all Men could profit from the past!
 Each know his Duty, each excel the last,
 And justly execute his stated Task.

A TABLE of the most Reverend, Right Reverend, and Reverend, the ARCHBISHOPS, BISHOPS and DEANS, exercising Ecclesiastical Jurisdiction, 1786.

BISHOPS.	Sees.	Date.	Succeeded.	DEANS.
Dr. John Moore	{ Bangor	1775	Ewer deceased	
Arch-Bishop	{ Canterb. A. B.	1783	Cornwallis dec.	Dr. Horne
Dr. Will. Markham	{ Chester	1748	Keene translat.	
Arch-Bishop	{ York A. B.	1777	Drummond dec.	Dr. J. Fountayne
	{ St. David's	1761	Squire decaas.	
Dr. Robert Lowth	{ Oxford	1757	Hume transl.	
	{ London	1777	Terrick dec.	Bishop Thurlow
	{ Bangor	1754	Willes transl.	
Dr. John Egerton	{ Durham	1752	Trevor decaas.	Hon. W. Digby
	{ Litch & Cov.	1768	Cornwallis tr.	
Hon. Dr. B. North	{ Worcester	1775	Johnson decaas.	
	{ Winchester	1781	Thomas decaas.	Dr. Ogle
Lord J. Beauclerk	{ Hereford	1746	Egerton decaas.	Dr. Wetherell
Sir W. Ashburnham	{ Chichester	1754	Mawson transl.	Dr. Harward
	{ St. David's	1766	Clagget transl.	
Dr. Charles Moss	{ Bath & Wells	1774	Willes deceased	Ld. Fr. Seymour
Dr. J. Shipley	{ St. Asaph	1769	Newcome dec.	Mr W.D. Shipley
Dr. Edmund Law	{ Carlisle	1769	Lytrelton dec.	Dr. Ekins
	{ Landaff	1769	Sh. pley transl.	
Dr. S. Barrington	{ Salisbury	1782	Hume dec.	Dr. Noel
Dr. John Hinchliffe	{ Peterborough	1769	Lamb dec.	Dr. Ch. Tarrant
	{ St. David's	1774	Moss transl.	
H. Dr. James Yorke	{ Gloucester	1779	Warburton dec.	
	{ Ely	1781	Keene deceased	Dr. Cooke
Dr. John Thomas	{ Rochester	1774	Pearce dec.	Dr. Dampier
	{ Litch. & Cov.	1775	B. North tr.	
Dr. Hurd	{ Worcester	1781	B. North tr.	Dr. St. John
Dr. Beilby Porteus	{ Chester	1777	Markham tran.	Dr. Will. Smith
Dr. John Butler	{ Oxford	1777	Lowth transl.	Dr. Jackson
Dr. John Ross	{ Exeter	1778	Keppel dec.	Dr. Butler
Dr. Thurlow	{ Lincoln	1779	Green dec.	Dr. Kaye
	{ St. David's	1779	Yorke transl.	
Dr. John Warren	{ Bangor	1783	Mo & transl.	Dr. Tho. Lloyd
Dr. J. Cornwallis	{ Litch & Cov.	1781	Hurd transl.	Dr. Proby
Dr. Samuel Hallifax	{ Gloucester	1781	Yorke transl.	Dr. Josiah Tucker
	{ Bristol	1782	Hume translat.	
Dr. Bagot	{ Norwich	1783	Yonge dec.	Dr. P. Lloyd
Dr. Watson	{ Landaff	1782	Barrington tr.	Dr. Adams, A.D.
Dr. Smalwell	{ St. David's	1783	Warren transl.	Mr. Wollaston, P.
Dr. Wilfon	{ Bristol	1783	Bagot transl.	Dr. Hallam
	{ Westminster	1768		Bishop Thomas
Mr. Claud Crigan	{ Sodor & Man	1784	Mason dec.	
	{ Windsor	1778	Hon. &	Rev. Dr. Harley

A General INTEREST TABLE,
by which the Interest of any Sum, at any Rate, and for any Time,
may be readily found.

Days	3 per Cent.			$3\frac{1}{2}$ per Cent.			4 per Cent.			$4\frac{1}{2}$ per Cent.			5 per Cent.		
	l.	s.	d. q.	l.	s.	d. q.	l.	s.	d. q.	l.	s.	d. q.	l.	s.	d. q.
1			1 3			2 1			2 2			3 0			3 0
2			3 3			4 2			5 1			6 0			6 2
3			5 3			6 3			7 3			8 3			9 3
4			7 3			9 0			10 2			11 3	1	1	0
5			9 3			11 2	1	1	1	1	2	3	1	4	1
6			11 3	1	1	3	1	3	3	1	5	3	1	7	2
7	1	1	3	1	4	0	1	6	1	1	8	3	1	11	0
8	1	3	3	1	6	1	1	9	0	1	11	3	2	2	1
9	1	5	3	1	8	2	1	11	2	2	2	2	2	5	2
10	1	7	2	1	11	0	2	2	1	2	5	2	2	8	3
20	3	3	1	3	10	0	4	4	2	4	11	1	5	5	3
30	4	11	0	5	9	0	6	6	3	7	4	3	8	2	2
40	6	6	3	7	8	0	8	9	0	9	10	1	10	11	2
50	8	2	2	9	7	0	10	11	2	12	3	3	13	8	1
60	9	10	1	11	6	0	13	1	3	14	9	2	16	5	1
70	11	6	0	13	5	0	15	4	0	17	3	1	19	2	0
80	13	1	3	15	4	0	17	6	1	19	8	3	1	11	0
90	14	9	2	17	3	0	19	8	2	1	2	1	1	4	7
100	16	5	1	19	2	0	1	11	0	1	4	8	1	7	4
200	1	12	10	1	18	4	1	2	3	10	0	2	9	3	3
300	2	9	3	2	17	6	1	3	5	9	0	3	13	11	1

N. B. This Table contains the interest of 100l. for all the several days in the 1st column, and at the several rates of 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, and 5 per cent. in the other 5 columns.

To find the interest of 100l. for any other time, as 1 year and 278 days, at $4\frac{1}{2}$ per cent. Take the sums for the several days here annexed.

The interest for 1 year	4	10	0	0
Against 200 days is	-	2	9	3
70 days	-	0	17	3
8 days	-	0	1	11
Interest required	-	7	18	6

For any other Sum than 100l. First find for 100l. as above, and take it so many times or parts as the sum is of 100l. Thus, to find for 355l. at $4\frac{1}{2}$, for 1 year and 278 days,

First, 3 times the above sum, (for 300l.) is	-	23	15	8
$\frac{1}{2}$ (for 50l.) is	-	3	19	3
$\frac{1}{10}$ of this (for 5l.) is	-	0	7	11
So for 355 it is	-	28	2	10

When the interest is required for any other rate than those in the table, it may easily be made out from them. So $\frac{1}{2}$ of 5 is $2\frac{1}{2}$, $\frac{1}{2}$ of 4 is 2, $\frac{1}{2}$ of 3 is $1\frac{1}{2}$, $\frac{1}{3}$ of 3 is 1, 1-6th of 3 is $\frac{1}{2}$, and 1-12th of 3 is $\frac{1}{4}$. And so, by parts, or by adding or subtracting, any rate may be made out.

The LUNATIONS.

First quarter the 7th day, at 43 minutes past noon,
 Full Moon the 14th day, at 36 minutes past noon,
 Last quarter the 22d day, at 48 minutes past 11 morning,
 New Moon the 30th day, at 38 minutes past 2 morning.

M D	Sunday & other remark. days	☉ rises	☉ sets	☉'s declin.	☽'s declin.	☽ rises & sets	☽ south	Clock bef. ☉	
A	1 S. aft. Christm. Circum.		3 56	22 59	22 51	5 a 5	ca 5	4 1	
2		8 4	3 56	22 54	18 11	6 25	1 47	4 41	
3		8 3	3 57	22 48	13 3	7 47	2 38	5 11	
4		8 2	3 58	22 41	7 14	9 7	3 26	5 39	
5	Old Christ. Day	8 2	3 58	22 34	0 58	10 20	4 14	6	
6	Epiphany	8 1	3 59	22 27	5 n 20	11 5	5 2	6 32	
7		8 0	4 0	22 20	11 2	morn	5 51	6 58	
A	1 S. aft. Epiph.	Lucian	4 1	22 1	16 52	1 21	6 43	7 23	
9	Flow Monday	7 58	4 2	22 3	21 24	2 47	7 38	7 48	
10		7 57	4 3	21 54	24 40	4 9	8 36	8 12	
11		7 56	4 4	21 44	26 26	5 26	9 36	8 36	
12	Old N. Yr's Day	7 55	4 5	21 35	26 31	6 32	10 35	8 59	
13	Cam. Term beg	Hilary	4 6	21 24	24 59	7 20	11 31	9 4	
14	Om. Term beg	7 53	4 7	21 14	22 3	☽ rises morn		9 43	
A	2 S. aft. Epiph.	7 52	4 8	21 3	18	5 a 31	0 25	10 4	
16		7 51	4 10	20 51	13 16	6 44	1 1	10 24	
17		7 49	4 11	20 39	8 3	8 0	1 5	10 44	
18	Q. Char. b. d. k.	Prisca	4 12	20 27	2 3	9 10	2 41	11 2	
19		7 46	4 14	20 14	2 8 48	10 19	3 21	11 21	
20	Febian	7 45	4 15	20 1	8 3	11 28	4 11	11 38	
21	Agnes	7 44	4 16	19 48	12 59	morn.	4 42	11 55	
A	3 S. aft. Epiph.	Vincen	4 18	19 34	17 26	0 38	5 23	12 11	
23	Hil. Term beg.	7 41	4 19	19 20	21 1	1 50	6 8	12 26	
24		7 39	4 21	19 6	24 11	3 0	6 55	12 40	
25	Conv. St. Paul	7 38	4 22	18 51	16 5	4 10	7 46	12 54	
26		7 36	4 24	18 36	16 41	5 12	8 4	13 7	
27	Pr. Aug. Fred. b.	7 34	4 26	18 20	15 51	6 3	9 35	13 19	
28		7 33	4 27	18 4	23 33	6 43	10 31	13 30	
A	4 S. aft. Epiph.	7 31	4 29	17 48	19 50	7 13	11 27	13 40	
30	K. Cha. I. mart.	7 30	4 30	17 32	14 55	☽ sets	0 a 20	13 50	
31		7 28	4 32	17 15	9	6 a 11	1 11	13 59	
Days	Day increas.	Length of Day.	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♂	h sets.
1	0 8	7 52	7 ^m 7	18 0	23 14	21 11	25 11	39 4	5 a 57
7	0 16	8 0	7 18	18 33	26 40	17 29	5 1	12 26	5 34
13	0 28	8 12	7 29	19 6	29 36	23 35	14 45	16 28	5 12
19	0 44	8 28	7 40	19 39	29 30	29 42	24 15	15 19	5 51
25	1 0	8 45	7 51	20 12	5 23	50 48	3 45	9 1	4 30

1786.

January.

9

Day	lig	Day	lig.	Durat.	Pl	D's	h's	4's	8's	9's	8's
	begins		ends	twilig.		node	latitude	latitude	latitude	latitude	latitude
1	5 59	6	1	2 6	3	58	0 36	1 15	2 26	0 n 31	0 n 55
7	5 56	6	4	2 4	3	39	0 37	1 17	2 27	0 15	2 44
13	5 52	6	8	2 2	3	20	0 37	1 15	2 27	0 0	3 26
19	5 46	6	14	2 0	3	1	0 37	1 14	2 27	0 s 15	2 56
25	5 30	6	21	1 58	2	42	0 38	1 13	2 25	0 29	1 55
M	O's			D's		h's		4's	8's	9's	8's
D	longitude			long.	latitude	long.	long.	long.	long.	long.	long.
A	11	21	22	23	23	0 s 52	4 m 52	6 V 35	28 8 16	22 2 10	25 5 27
2	12	22	34	6 m 59	0 n 23	4 59	6 42	28 D 16	23 25	24 15 58	
3	13	23	47	20 4	1 37	5 6	6 49	28 16 24	40	24 13	
4	14	24	59	4 X 43	2 47	5 13	6 55	28 17 25	55	23 26	
5	15	26	10	18 46	3 47	5 20	7 2	28 19 21	10	22 25	
6	16	27	21	2 V 54	4 34	5 27	7 9	28 23 25	25	21 15	
7	17	28	31	17 5	5 4	5 33	7 16	28 29 29	41	19 59	
A	18	29	41	18 16	5 16	5 40	7 24	28 35 0	56	18 40	
9	19	30	50	15 26	5 4	5 47	7 32	28 41 2	11	17 21	
10	20	31	58	29 32	4 43	5 54	7 40	28 48 3	26	16 2	
11	21	33	5	13 31	4 0	6 1	7 48	28 54 4	41	14 47	
12	22	34	12	27 20	3 4	6 8	7 56	29 0 5	56	13 38	
13	23	35	18	10 56	1 58	6 15	8 4	29 6 7	12	12 38	
14	24	36	23	4 18	0 47	6 22	8 13	29 14 8	27	11 47	
A	25	37	27	7 23	0 s 25	6 29	8 21	29 23 9	42	11 4	
16	26	38	31	20 12	1 35	6 36	8 30	29 33 10	58	10 28	
17	27	39	35	2 m 44	2 39	6 43	8 38	29 41 12	13	10 3	
18	28	40	38	15 2	3 33	6 50	8 47	29 55 13	28	9 47	
19	29	41	41	27 7	4 18	6 57	8 56	0 1 7	24	9 47	
20	0	42	42	9 5	4 51	7 4	9 5	0 19 15	59	9 42	
21	1	43	44	20 57	5 11	7 11	9 15	0 32 17	14	9 51	
A	2	44	45	21 50	5 17	7 19	9 24	0 45 18	29	10 8	
23	3	45	46	14 48	5 10	7 26	9 34	0 59 19	44	10 31	
24	4	46	45	26 55	4 50	7 33	9 43	1 14 21	0	11 0	
25	5	47	45	9 17	4 16	7 40	9 53	1 29 22	15	11 34	
26	6	48	43	21 55	3 28	7 47	10 3	1 45 23	3	13 13	
27	7	49	41	4 55	2 29	7 54	10 11	2 1 24	45	12 57	
28	8	50	38	18 16	1 20	8 1	11 24	2 17 25	10	13 45	
A	9	51	34	1 m 58	0 5	8 8	10 35	2 34 27	15	14 37	
30	10	52	28	15 59	1 n 12	8 15	10 45	2 51 28	30	15 32	
31	11	56	22	0 X 15	2 26	8 22	10 50	3 9 29	46	6 30	
h's	4's	8's	9's	h's	4's	8's	9's	h's	4's	8's	9's
fers	fers	ries	ries	declin.	declin.	declin.	declin.	declin.	declin.	declin.	declin.
1	11 a 47	5 m 4	7 m 39	8 m 46	19 s 40	1 n 25	22 n 10	22 s 43	20 s 11		
7	11 24	4 39	7 29	7 49	19 30	1 43	22 14	23 13	19 17		
13	11 3	4 16	7 19	6 4	19 20	2 3	22 23	23 16	19 27		
19	10 43	3 55	7 10	6 11	19 10	2 25	22 35	22 54	20 12		
25	10 23	3 37	7 2	6 9	8 59	2 49	22 51	22 7	21 3		

The LUNATIONS.

First quarter the 5th day, at 28 minutes past 8 night,
 Full Moon the 13th day, at 41 minutes past 4 morning,
 Last quarter the 21st day, at 17 minutes past 8 morning,
 New Moon the 28th day, at 26 minutes past 2 afternoon.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin	☽'s declin.	☽rises & sets	☽ south	Clock bef. ☉	
1		7 26	4 34	16 55	2 54	8 a 7	2 a 10	14 7	
2	Purif. Cand. day	7 25	4 35	16 40	3 n 43	9 34	2 50	14 14	
3	Blasg	7 23	4 37	16 23	10 0	11 0	3 41	14 20	
4		7 21	4 39	16 5	15 43	morn	4 33	14 25	
A	5 S. aft. Epiph.	Agatha	4 41	15 46	10 30	0 26	5 27	14 30	
6		7 18	4 42	15 28	24 4	1 51	6 24	14 35	
7		7 16	4 44	15 9	26 9	3 9	7 23	14 36	
8		7 14	4 46	14 50	26 38	4 18	8 22	14 38	
9		7 12	4 48	14 31	25 33	5 10	9 19	14 40	
10		7 10	4 50	14 11	43 4	5 51	10 12	14 40	
11		7 9	4 51	13 52	19 25	6 8	11 2	14 40	
A	Septuagesima S.	7 7	4 53	13 32	14 55	6 39	11 48	14 39	
13	Hil. Term ends	7 5	4 55	13 11	9 51	Drises	morn	14 38	
14	Valentine	7 3	4 57	12 51	4 29	6 a 49	0 32	14 34	
15		7 1	4 59	12 30	0 57	8 0	1 13	14 31	
16		6 59	5 1	12 10	6 18	9 9	1 54	14 27	
17		6 57	5 3	11 49	11 21	10 19	2 35	14 22	
18		6 55	5 5	11 27	15 59	11 30	3 16	14 16	
A	Sexagesima S.	6 53	5 7	11 6	19 59	morn	4 0	14 10	
20		6 52	5 8	10 46	23 13	0 42	4 46	14 4	
21		6 50	5 10	10 23	25 27	1 51	5 35	13 56	
22		6 48	5 12	10 1	26 32	2 56	6 27	13 48	
23		6 46	5 14	9 39	26 17	3 51	7 20	13 40	
24	St. Matthias	Pr Adel, Fred. h.	9 17	24 37	4 36	8 16	13 30		
25		6 42	5 18	8 54	21 32	5 10	9 11	13 21	
A	Quinqu. Sunday	6 40	5 20	8 32	17 9	5 37	10 5	13 10	
27		6 38	5 22	8 9	11 41	5 58	10 5	12 59	
28	Shrove Tuesday	6 36	5 24	7 47	5 27	Drises	11 50	12 48	
☽ Days	Day increaf.	Length of day	Helioc. long. h	Helioc. long. 11	Helioc. long. ☉	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♂	h rises
1	1 24	9 8	8 40	20 50	8 42	12 54	14 49	21 38	7 m 20
7	1 41	9 28	8 15	21 23	11 38	18 59	24 18	20 27	6 58
13	2 6	9 50	8 26	21 56	14 25	5 3	3 47	7 12	6 56
19	2 30	10 14	8 37	22 29	17 9	12 5	13 16	23 42	6 14
25	2 52	10 36	8 48	23 2	19 55	7 7	22 46	10 42	5 53

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February.

II

Day	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	4's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	5 31	6 20	1 55	2 ³³ 2	0 s 38	1 s 18	2 n 13	0 s 45	0 n 42
7	5 22	6 38	1 54	2 1	0 39	1 10	2 21	0 56	0 s 14
13	5 12	6 48	1 52	1 42	0 39	1 9	2 18	1 7	1 1
19	5 1	6 59	1 52	1 23	0 40	1 8	2 16	1 14	1 37
25	4 50	7 10	1 52	1 3	0 40	1 7	2 13	1 20	2 0
M D	☉'s longitude	☽'s long.	☽'s latitude	h's long.	4's long.	δ's long.	♀'s long.	♂'s long.	
1	12 54 14	14 42	3 n 32	8 30	11 6	3 11 27	1 17 31	17 31	
2	13 55 5	21 13	4 24	8 31	11 17	3 55	2 16 18	18 35	
3	14 55 54	13 42	4 59	8 41	11 28	4 14	3 31 19	19 41	
4	15 56 42	28 6	5 15	8 51	11 39	4 24	4 46 20	20 49	
A	16 57 28	12 8 20	5 12	8 18	11 50	4 44	6 2 21	59	
6	17 58 12	26 23	4 50	9 6	12 1	5 4	7 17 23	11	
7	18 58 55	10 11 12	4 11	9 13	12 12	5 25	8 32 24	25	
8	19 59 36	23 48	3 19	9 20	12 23	5 45	9 47 25	41	
9	21 0 15	7 5 10	2 17	9 27	12 35	6 6	11 2 26	58	
10	22 0 53	20 19	1 7	9 34	12 46	6 28	12 17 28	16	
11	23 1 26	3 5 16	0 8	9 41	12 58	6 50	13 53 29	36	
A	24 2 2	16 0	1 12	9 48	13 10	7 12	14 49 0	57	
13	25 2 35	28 32	2 17	9 55	13 22	7 34	16 3 2	19	
14	26 3 6	10 12 54	3 14	10 2	13 34	7 57	17 18 3	42	
15	27 3 35	23 6	4 2	10 9	13 46	8 21	18 33 5	7	
16	28 4 3	5 8	4 38	10 16	13 58	8 45	19 48 6	33	
17	29 4 30	17 5	5 2	10 23	14 10	9 8	21 3 8	0	
18	X 0 4 55	28 57	5 12	10 30	14 22	9 32	22 18 9	28	
A	1 5 19	10 11 49	5 10	10 37	14 35	9 56	23 10 58		
20	2 5 41	22 45	4 54	10 44	14 47	10 21	24 48 12	28	
21	3 6 2	4 50	4 25	10 51	15 9	10 46	27 5 13	59	
22	4 6 22	17 7	3 43	10 58	15 12	11 11	28 18 15	31	
23	5 6 41	29 43	2 49	11 4	15 25	11 36	29 33 17	4	
24	6 6 58	12 14 40	1 46	11 11	15 38	12 1	30 48 18	38	
25	7 7 13	26 3	0 35	11 18	15 5	12 27	1 3 20	14	
A	8 7 27	9 52	0 n 40	11 25	16 2	12 58	2 18 21	51	
27	9 7 39	24 7	1 55	11 31	16 16	13 19	3 33 23	29	
28	10 7 49	8 44	3 4	11 38	16 19	13 45	4 48 25	7	
Days	☽ sets	♂ sets	♀ rises	♂ rises	h's declin.	4's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	10 1	3 m 18	7 m 1	6 m 10	18 s 4	3 n 18	23 n 13	20 s 41	21 s 38
7	9 43	3 4	6 54	6 15	18 36	3 45	23 33	19 3	21 30
13	9 26	2 53	6 47	6 21	18 25	4 14	23 52	17 7	20 39
19	9 10	2 43	6 41	6 24	18 14	4 43	24 12	14 51	19 3
25	8 54	2 34	6 34	6 27	18 3	5 13	24 3	12 22	16 40

The LUNATIONS.

First quarter the 7th day, at 16 minutes past 5 morning,
 Full Moon the 14th day, at 4 minutes past 9 evening,
 Last quarter the 23d day, at 54 minutes past 1 morning,
 New Moon the 29th day, at 8 minutes past 12 night.

M. Sundays & other remark. days	☉ rises	☉ sets	☉'s declin	☽'s declin.	☽'s & sets	☽ South	Clock bef. ☉		
1 Ash Wednesday	David	5 26	7 24	1 n 12	7 a 8	0 a 41	12 36		
2 Chad	6 32	5 28	7 1	7 45	8 37	1 33	12 23		
3	6 30	5 30	6 3	13 53	10 7	2 27	12 10		
4	6 28	5 32	6 1	19 8	11 37	3 23	11 57		
A Quad. 3 S. in Lent	6 26	5 34	5 52	23 9	morn	4 21	11 43		
6	6 24	5 36	5 20	25 39	1 1	5 21	11 29		
7 Perpetua	6 22	5 38	5 5	25 32	2 14	6 21	11 14		
8 Ember Week	6 20	5 40	4 4	25 49	3 12	7 18	10 59		
9	6 18	5 42	4 18	23 39	3 54	8 12	10 43		
10	6 16	5 44	3 5	20 19	4 26	9 2	10 27		
11	6 14	5 46	3 31	16 6	4 48	9 49	10 11		
A 3 Sun. in Lent.	Gregory	5 48	3 8	1 15	5 9	10 34	9 55		
13	6 10	5 50	2 44	6 3	5 28	11 16	9 38		
14	6 8	5 52	2 2	0 40	☽ rises	11 57	9 20		
15	6 6	5 54	1 5	4 41	7 a 2	morn	9 3		
16	6 4	5 56	1 33	9 48	8 11	0 38	8 45		
17 St. Patrick	6 2	5 58	1 10	14 33	9 22	1 19	8 28		
18 Edm. K. W. S.	6 0	6 0	0 46	18 44	10 32	2 2	8 10		
A 3 Sun. in Lent	5 58	6 2	0 22	22 10	11 43	2 47	7 51		
20	5 56	6 4	0 n 2	24 42	morn	3 35	7 33		
21 Benedict	5 54	6 6	0 25	26 8	0 50	4 26	7 15		
22	5 52	6 8	0 48	26 20	1 48	5 18	6 56		
23	5 50	6 10	1 12	25 12	2 36	6 11	6 38		
24	5 48	6 12	1 36	22 43	3 14	7 5	6 19		
25 Annunc. Lady D.	5 46	6 14	2 0	18 58	3 42	7 58	6 1		
A 4 or Midlent S.	5 44	6 16	2 23	14 5	4 5	8 50	5 42		
27	5 42	6 18	2 47	8 17	4 24	9 41	5 24		
28	5 40	6 20	3 10	1 n 53	4 44	10 33	5 5		
29	5 30	6 21	3 32	4 47	☽ sets	11 26	4 46		
30	5 37	6 23	3 57	11 13	7 a 43	0 a 20	4 28		
31	5 35	6 25	4 20	17 0	9 15	1 16	4 10		
☽ Day	Day increas	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	h rises
1	3 18	10 52	8 56	23 24	21 54	11 28	8 29	5 22	41
2	3 32	11 16	9 7	23 56	24 30	17 8	8 36	12 21	5 19
3	3 56	11 40	9 18	24 20	27 1	28 7	8 7	5 2	4 58
4	4 2	12 4	9 29	25 2	29 56	29 4	27 38	2 1	4 38
5	4 44	12 28	0 40	25 35	23 38	5 1	7 11	4 8	15

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March.

13

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	4 43	7 17	1 5	0 ⁵⁵ 51	0 8 40	1 5 6	2 11 11	1 8 23	2 5 9
7	4 30	7 30	1 52	0 3	0 41	1 6	2 8	1 26	2 8
13	4 17	7 43	1 53	0 1	0 42	1 5	2 5	1 26	1 51
19	4 4	7 56	1 54	29 55	0 43	1 4	2 2	1 24	1 16
25	3 50	8 10	1 56	29 3	0 43	1 4	1 59	1 19	0 5 21
VI D	☉'s longitude	☽'s long	☽'s latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.	♂'s long.
1	11 7 57	23 36	4 n 2	11 44	16 42	14 11 12	6 2	26 46	6
2	12 8 4	8 35	4 44	11 51	16 55	14 36	7 17	28 26	
3	13 8 8	23 32	5 6	11 57	17 8	15 7	8 32	0 8	
4	14 8 10	8 18	5 8	12 4	17 21	15 34	9 47	1 52	
A	15 8 10	22 46	4 45	12 10	17 35	16 2	11 2	3 36	
6	16 8 8	6 15	4 14	12 17	17 48	16 29	12 17	5 21	
7	17 8 4	20 42	3 24	12 23	18 2	16 57	13 32	7 7	
8	18 7 57	4 5	2 25	12 29	18 15	17 25	14 47	8 54	
9	19 7 48	17 14	1 15	12 35	18 28	17 54	16 1	10 42	
10	20 7 37	0 5	0 10	12 41	18 42	18 22	17 16	12 32	
11	21 7 23	12 41	0 58	12 48	18 55	18 51	18 30	14 23	
A	22 7 7	25 7	2 1	12 54	19 9	19 19	19 45	16 15	
13	23 6 49	7 23	2 59	13 0	19 23	19 48	21 0	18 8	
14	24 6 29	19 32	3 47	13 6	19 36	20 17	22 15	20 3	
15	25 6 7	1 35	4 2	13 12	19 50	20 46	23 29	21 58	
16	26 5 43	13 33	4 50	13 18	20 4	21 16	24 44	23 54	
17	27 5 17	25 27	5 3	13 24	20 18	21 46	25 59	25 51	
18	28 4 49	7 19	5 3	13 30	20 32	22 15	27 13	27 50	
A	29 4 19	19 11	4 49	13 35	20 47	22 45	28 28	29 50	
20	☿ 0 3 47	1 7	4 23	13 41	21 0	23 15	29 43	1 50	
21	1 3 14	13 10	3 45	13 46	21 14	23 45	0 53	3 51	
22	2 2 39	25 24	2 50	13 52	21 28	24 15	2 12	5 53	
23	3 2 2	7 55	1 58	13 57	21 42	24 45	3 27	7 55	
24	4 1 24	20 40	0 52	14 3	21 56	25 16	4 41	9 57	
25	5 0 44	4 3	0 n 18	14 8	22 10	25 46	5 56	11 59	
A	6 0 2	17 4	1 30	14 13	22 24	26 17	7 10	14 1	
27	6 59 18	2 2	2 39	14 18	22 38	26 48	8 25	16 2	
28	7 58 33	16 43	3 39	14 24	22 52	27 19	9 39	18 3	
29	8 57 45	1 46	4 26	14 29	23 6	27 50	10 54	20 2	
30	9 56 56	17 1	4 54	14 34	23 21	28 21	12 8	22 0	
31	10 56 5	2 18	5 2	14 39	23 35	28 55	13 23	23 55	
Days	u's sets	δ's sets	♀ rises	♂ rises	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	8 44	2 m 27	6 m 33	6 m 21	17 56	5 n 3	24 n 42	10 s 36	14 s 37
7	8 29	2 18	6 26	6 21	17 46	6 4	24 57	7 48	10 54
13	8 15	2 10	6 18	6 17	17 36	6 30	25 9	4 53	6 24
19	8 2	2 1	6 8	6 5	17 27	7 7	25 18	1 53	1 13
25	7 49	1 53	5 55	6 0	17 18	7 39	25 23	1 n 9	4 n 25

The LUNATIONS.

First quarter the 5th day, at 48 minutes past 3 afternoon,
 Full Moon the 13th day, at 4 minutes past 3 afternoon,
 Last quarter the 21st day, at 41 minutes past 3 afternoon,
 New Moon the 28th day, at 16 minutes past 8 morning.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock bef. ☉	
1		5 33	6 27	4 n 43	21 s 39	10 a 44	2 a 15	3 51	
A 5	Sun. in Lent	5 31	6 29	5 6	24 47	morn	3 15	3 33	
3	Richard	5 29	6 31	5 29	26 13	0 2	4 10	3 15	
4	St. Ambrose	5 27	6 33	5 52	25 56	1 11	5 19	2 57	
5	Old Lady Lay	5 25	6 35	6 15	24 6	1 59	6 15	2 39	
6		5 23	6 37	6 37	21 0	2 36	7 7	2 22	
7	Camb. T. ends	5 21	6 39	7 0	16 59	3 0	7 56	2 4	
8	Oxf. Term end	5 19	6 41	7 22	12 19	3 21	8 41	1 47	
A 10	Palm Sunday	5 17	6 43	7 45	7 14	3 37	9 23	1 30	
10		5 15	6 45	8 7	1 57	3 51	10 4	1 13	
11		5 13	6 47	8 29	3 s 21	4 4	10 45	0 57	
12		5 11	6 49	8 51	8 29	4 17	11 26	0 41	
13	Maundy Thurs.	5 9	6 51	9 12	13 18	☾ rises	morn	0 25	
14	Good Friday	5 7	6 53	9 34	17 36	8 a 25	0 8	0 9	
15		5 5	6 55	9 55	21 13	9 39	0 53	cast. 6	
A 17	Easter day	5 4	6 56	10 17	23 58	10 47	1 40	0 21	
17	Easter Monday	5 2	6 58	10 38	25 40	11 47	2 29	0 35	
18	Easter Tuesday	5 0	7 0	10 59	26 10	morn	3 20	0 49	
19	Alphege	4 58	7 2	11 20	25 24	0 38	4 12	1 3	
20		4 56	7 4	11 40	23 21	1 19	5 5	1 16	
21		4 54	7 6	12 0	20 5	1 51	5 57	1 29	
22		4 52	7 8	12 21	15 44	2 15	6 4	1 41	
A 24	Low S. St. Geor.	4 50	7 10	12 41	10 27	2 34	7 38	1 53	
24		4 49	7 11	13 0	4 28	2 52	8 27	2 4	
25	St. Mark. Pres. Mary b.	7 13	13 20	1 n 56	3 9	9 17	2 15		
26	Ox. & Ca. T. beg.	4 45	7 15	13 39	8 22	3 25	10 9	2 25	
27		4 43	7 17	13 58	14 26	3 46	11 4	2 35	
28		4 41	7 19	14 17	19 38	☾ sets	0 a 3	2 44	
29		4 40	7 21	14 36	23 30	9 a 45	1 5	2 53	
A 2	Sun. aft. Easter	4 38	7 22	14 54	25 40	10 59	2 8	3 2	
Days	Day increas.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ☉	h rises
1	5 10	12 54	9 53	26 13	5 45	11 55	18 20	17 11	3 m 53
7	5 34	13 18	10 4	26 46	8 26	17 49	27 55	24 25	3 32
13	5 58	13 42	10 15	27 19	11 5	23 41	7 8	30 50	3 11
19	6 20	14 4	10 26	27 52	13 44	29 33	17 7	23 57	2 50
25	6 42	14 26	10 37	28 5	16 25	5 11	23 26	16 22	2 29

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April.

15

Day	Day lig. begins.	Day lig. ends.	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	3 32	8 28	2 c	19 12	0 44	1 3	1 n 56	1 11	0 n 58
7	3 16	8 44	2 4	28 53	0 45	1 3	1 5	1 2	2 3
13	3 0	9 c	2 9	28 34	0 46	1 2	1 56	0 52	2 46
19	2 43	9 17	2 14	28 15	0 47	1 2	1 47	0 40	2 54
25	2 26	9 34	2 20	27 56	0 48	1 2	1 44	0 27	2 17
M D	☉'s longitude	☽'s long.	☽'s latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.	
1	11 55	12 17	8 24	4 n 48	14 44	23 50	29 12	14 37	25 48
A	12 54	16 2	11 11	4 15	14 49	24 4	29 56	15 51	27 39
3	13 53	17 16	33	3 27	14 54	24 18	0 52	17 5	29 26
4	14 52	16 0	28	2 28	14 58	24 32	0 58	18 20	1 8 9
5	15 51	13 13	56	1 22	15 3	24 47	1 30	19 34	2 49
6	16 50	8 26	59	0 14	15 8	24 51	2 20	4 4	4 25
7	17 49	0 9	42	0 53	15 12	25 16	2 34	22 3	5 56
8	18 47	50 22	9	1 57	15 17	25 30	3 6	23 17	7 23
A	19 46	37 4	24	2 53	15 21	25 44	3 38	24 31	8 45
10	20 45	23 16	29	3 41	15 25	25 58	4 10	25 4	10 1
11	21 44	7 28	29	4 18	15 30	26 13	4 43	26 59	11 12
12	22 42	47 10	24	4 44	15 34	26 27	5 15	28 13	12 18
13	23 41	26 22	18	4 57	15 38	26 42	5 48	29 28	13 18
14	24 40	4 4	11	4 58	15 42	26 56	6 21	0 42	14 13
15	25 38	39 16	4	4 45	15 46	27 11	6 53	1 56	15 02
A	26 37	11 27	59	4 20	15 49	27 25	7 26	3 10	15 45
17	27 35	43 9	58	3 43	15 56	27 39	7 58	4 24	16 22
18	28 34	13 22	4	2 56	15 57	27 54	8 31	5 38	16 53
19	29 32	41 4	20	2 0	16 0	28 9	9 4	6 53	17 19
20	30 31	8 16	50	0 57	16 4	28 23	9 37	8 7	17 38
21	1 29	33 29	38	0 n 10	16 7	28 37	10 10	9 21	17 51
22	2 27	57 12	49	1 19	16 11	28 52	10 43	10 35	17 58
A	3 26	20 26	28	2 26	16 14	29 6	11 17	11 49	18 00
24	4 24	41 10	30	3 26	16 17	29 21	11 50	13 3	17 57
25	5 23	0 25	2	4 14	16 20	29 35	12 24	14 17	17 48
26	6 21	18 9	59	4 47	16 23	29 49	12 57	15 31	17 35
27	7 19	34 25	13	5 1	16 26	0 8 4	13 31	16 45	17 17
28	8 17	49 10	32	4 53	16 29	0 18	14 4	17 58	16 53
29	9 16	2 25	46	4 24	16 31	0 33	14 38	19 12	16 26
A	10 14	13 10	44	3 37	16 34	0 47	15 11	20 26	15 56
Day	☽ sets	♀ sets	♂ sets	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.	
1	7 a 32	1 m 46	6 a 38	7 a 51	17 s 8	8 n 16	25 n 24	4 n 40	10 n 53
7	7 17	1 37	7 2	8 31	17 1	8 47	15 19	7 38	15 27
13	7 4	1 28	7 24	3 55	16 54	9 20	25 10	10 29	18 29
19	6 49	1 19	7 46	8 58	16 48	9 52	14 56	13 12	19 43
25	6 34	1 9	8 3	8 35	16 43	10 22	24 37	15 43	19 2

The LUNATIONS.

First quarter the 5th day, at 16 minutes past 4 morning,
 Full Moon the 13th day, at 13 minutes past 7 morning,
 Last quarter the 21st day, at 29 minutes past 1 morning,
 New Moon the 27th day, at 41 minutes past 3 afternoon.

M	Sunday & other re mark. days	☉ rises	☉ sets	☉'s declin.	☽'s declin.	☽ rises & sets	☽ South	Clock aft. ☉	
1	St. Phil. & James	4 36	7 24	15 13	16 n 0	11 a 57	3 a 12	3 9	
2		4 34	7 26	15 31	24 38	morn	4 1	3 13	
3	Inv. of the Crost	East. T. begins		15 41	21 50	0 39	5 6	3 2	
4		4 31	7 29	16 6	17 57	1 9	5 57	3 29	
5		4 29	7 31	16 23	13 22	1 33	6 44	3 35	
6	St. John A. P. L.	4 27	7 33	16 40	8 21	1 49	7 28	3 40	
7	3 S. aft. Easter	4 26	7 34	16 56	3 6	2 4	8 9	3 44	
8		4 24	7 36	17 12	2 s 11	2 17	8 49	3 48	
9		4 23	7 37	17 28	7 20	2 30	9 29	3 52	
10		4 2	7 39	17 44	12 11	2 43	10 11	3 55	
11		4 19	7 41	18 0	16 35	2 59	10 55	3 57	
12	Old May Day	4 18	7 42	18 15	20 21	3 17	11 41	3 59	
13		4 16	7 44	18 30	23 18	☽ rises morn	4 0		
14	4 S. aft. Easter	4 15	7 45	18 44	25 14	9 a 44	0 29	4 0	
15		4 13	7 47	18 58	26 0	10 38	1 20	4 0	
16		4 12	7 48	19 12	25 31	11 22	2 12	4 0	
17		4 10	7 5	19 26	23 45	11 56	3 4	3 58	
18		4 9	7 51	19 39	20 47	morn	3 56	3 57	
19	Q. Charl. born	Dunst.	7 52	19 52	16 44	0 20	4 46	3 54	
20		4	7 53	20 4	11 48	0 42	5 35	3 51	
21	Rogat. Sunday	4 5	7 55	20 17	6 11	0 58	6 22	3 48	
22	Prs. Eliz. born	4 4	7 56	20 29	0 7	1 14	7 9	3 44	
23		4 2	7 58	20 40	6 n 6	1 31	7 59	3 39	
24		4 1	7 59	20 51	12 9	1 49	8 51	3 34	
25	Ascension	4 0	8 0	21 2	17 30	2 10	9 46	3 28	
26	Augustin	3 59	8 1	21 13	21 59	2 30	10 45	3 22	
27	Venerable Bede	3 58	8 2	21 23	24 52	☽ sets	11 47	3 16	
28	3 S. aft. Ascension	3 57	8 3	21 32	25 59	9 a 38	0 a 51	3 9	
29	K. Cha. II. rest.	Term ends	5	21 42	25 16	10 31	1 54	3 1	
30		3 54	8 6	21 51	22 54	11 6	2 53	2 53	
31		3 53	8 7	21 59	19 16	11 32	3 47	2 44	
Days	Day increaf.	Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	h rises
1	7 14	14 48	10 48	18 58	19 11	11 12	6 11	24 51	47 2 m 8
7	7 24	15 8	11 0	29 30	21 39	17 1	16 4	23 22	1 46
13	7 44	15 28	11 11	0 8	3 24	17 22	48 5	45 10	1 23
19	8 0	15 44	11 22	0 36	26 54	28 34	5 27	26 33	0 59
25	8 10	16 0	11 33	1 9	29 32	4 20	15 10	13 42	0 35

1786.

May.

17

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	s's latitude	q's latitude	g's latitude
1	2 7 9 55	2 31	27 13	0 8 49	1 8 2	1 14 1	0 8 13	0 1 57	
7	1 45 10 18	2 43	27 18	0 50	1 2	1 38	0 1 2	0 8 46	
13	1 20 10 45	3 1	26 59	0 51	1 2	1 35	0 17	2 18	
19	0 48 11 20	3 2	26 40	0 5	1 2	1 33	0 31	3 18	
25	All day-light			26 21	0 57	1 2	1 30	0 46	3 41
M D	☉'s longitude		☽'s long.	☽'s latitude	h's long.	u's long.	s's long.	q's long.	g's long.
1	8 11 12 22	25 11 17	2 38	16 37	1 8 1	15 54 5	21 8 40	15 8 24	
2	12 10 29	9 22	1 30	16 40	1 15	16 19 22	54 14	48	
3	13 8 34	22 58	0 19	16 42	1 29	16 53 23	7 14	12	
4	14 6 37	6 6	0 8 50	16 44	1 44	17 27 24	21 13	36	
5	15 4 38	18 51	1 55	16 46	1 58	18 126 35	13 0		
6	16 2 38	1 16	2 53	16 48	2 13	18 35 27	40 12	24	
A	17 0 36	13 28	3 42	16 50	2 27	19 9 29	5 11	47	
8	17 58 32	25 29	4 20	16 52	2 41	19 43 0	11 16	13	
9	18 56 26	7 24	4 46	16 54	2 55	20 17 1	30 10	41	
10	19 54 18	19 17	5 0	16 55	3 0	20 51 2	44 10	12	
11	20 52 8	1 9	5 16	57	3 23	21 25 3	51 9	46	
12	21 49 56	13 2	4 49	58	3 37	22 0 5	11 9	24	
13	22 47 43	24 55	4 24	17 0	3 51	22 35 6	25 9	7	
A	23 45 29	7 1	3 47	17 1	4 5	23 9 7	38 8	54	
15	24 43 14	19 8	2 59	17 2	4 19	23 44 8	52 8	44	
16	25 40 57	1 23	2 3	17 3	4 33	24 18 10	5 8	D 38	
17	26 38 39	13 48	1 0	17 4	4 46	24 54 11	19 8	38	
18	27 36 20	26 26	0 17	5	5 0	25 27 12	32 8	47	
19	28 34 0	9 18	1 16	17 6	5 14	26 2 13	46 8	49	
20	29 31 40	22 30	2 22	17 6	5 28	26 37 14	59 9	1	
A	11 0 29 19	6 3	3 22	17 7	5 42	27 12 16	13 9	18	
22	1 26 57	19 59	4 11	17 7	5 55	27 47 17	26 9	41	
23	2 24 34	4 19	4 47	17 8	6 9	28 22 18	40 10	8	
24	3 22 10	19 19	5 5	17 8	6 23	28 57 19	53 10	38	
25	4 19 45	3 8	5 3	17 9	6 36	29 32 21	7 11	12	
26	5 17 19	19 2	4 40	17 9	6 50	29 7 22	20 11	50	
27	6 14 52	4 6	3 57	17 9	7 4	0 42 23	34 12	32	
A	7 12 24	18 59	2 50	17 9	7 17	1 17 24	47 13	18	
29	8 9 55	3 32	1 50	17 9	7 31	1 52 26	1 14	8	
30	9 7 25	17 40	0 36	17 9	7 44	2 27 27	14 15	1	
31	10 4 54	1 21	0 8 38	17 8	7 58	3 2 28	28 15	58	
Days	u's rises	s's sets	q's sets	g's rises	h's decl. n.	u's decl.	s's decl.	q's decl.	g's decl.
1	4 m 22	0 m 58	8 a 23	4 m 30	16 s 39	19 n 52	24 n 13	18 n 0	17 n 23
7	4 2 0 46	8 41	4 14	15 30	11 22	23 44 20	0 14	39	
13	3 41 0 33	8 58	3 56	16 34	11 51	23 9 21	4 12	22	
19	3 21 0 19	9 15	3 40	16 32	12 18	22 29 23	0 11	20	
25	3 0 0 4	9 32	3 26	16 32	12 45	21 44 23	56 11	42	

B

The LUNATIONS.

First quarter the 3d day, at 30 minutes past 6 evening,
 Full Moon the 11th day, at 48 minutes past 9 evening,
 Last quarter the 19th day, at 8 morning,
 New Moon the 25th day, at 31 minutes past 11 night.

M	Sundays & other D remark. days	☉ rises	☉ sets	☉'s declin.	☽'s declin.	☽ rises & sets	☽ South	Clock aft. ☉
1	Nicomede	Ox, T.e.	8 8	22 n 8	14 n 46	11 a 55	4 n 37	2 36
2		3 52	8 8	22 15	9 44	morn	5 22	2 26
3		3 51	8 9	22 23	4 27	0 8	6 4	2 17
4	Whit-Sund. K.G.III.b.	3 10	8 10	22 30	0 s 53	0 22	6 45	2 7
5	Whit-Mond. P.Ern.A.b.	Bonifa.	22 36	6 6	0 35	7 26	1 57	
6	Whit-Tuesday	3 48	8 12	22 43	11 2	0 48	8 7	1 46
7	Ember Week	3 48	8 12	22 49	15 33	1 3	8 49	1 35
8		3 47	8 13	22 54	19 29	1 19	9 34	1 24
9		3 46	8 14	22 59	22 39	1 41	10 22	1 13
10	Prs. Amelia b.	3 46	8 14	23 4	24 50	2 11	11 12	1 1
11	Trin. Sunday St.	Barnab.	8 15	23 8	25 54	☽ rises	morn	0 49
12		3 45	8 15	23 12	25 42	9 a 17	0 4	0 37
13		3 44	8 16	23 15	24 12	9 54	0 57	0 25
14	Oxf. Term beg.	3 44	8 16	23 18	21 27	10 21	1 49	0 13
15	Corpus Christi	3 44	8 16	23 21	17 36	10 45	2 40	0 0
16	Trin. T. beg.	3 44	8 16	23 23	12 50	11 2	3 29	obe. 13
17	St. Alban	3 43	8 17	23 25	7 23	11 17	4 17	0 25
18	1 Sun. aft. Trin.	3 43	8 17	23 26	1 30	11 32	5 3	0 38
19		3 43	8 17	23 27	4 n 34	11 49	5 50	0 51
20	Trans. Ed. K.WS	3 43	8 17	23 28	10 31	morn	6 39	1 4
21	Longest day	3 43	8 17	23 28	16 0	0 7	7 30	1 17
22		3 43	8 17	23 28	20 38	0 29	8 25	1 30
23		3 43	8 17	23 27	24 1	1 1	9 25	1 43
24	St. John Bapt.	3 43	8 17	23 26	25 47	1 44	10 27	1 56
25	2 Sun. aft. Trin.	3 43	8 17	23 25	25 46	☽ sets	11 30	2 9
26		3 44	8 16	23 23	24 1	8 a 58	0 a 32	2 22
27		3 44	8 16	23 20	20 48	9 27	1 29	2 34
28		3 44	8 16	23 18	16 31	9 50	2 21	2 47
29	St. Peter.	3 45	8 15	23 14	11 33	10 7	3 8	2 59
30		3 45	8 15	23 11	6 13	10 22	3 53	3 11

Days	Day increas.	Length of day	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ♀	Helioc. long. ♂	h rises
1	8 32	16 16	11 46	1 47	2 35	11 2	26 32	5 36	0 7
7	8 40	16 24	11 57	2 20	5 12	16 47	6 17	27 9	11 a 42
13	8 48	16 32	12 8	2 53	7 50	22 30	16 32	22 35	11 16
19	8 50	16 34	12 19	3 26	10 27	28 14	25 48	23 4	10 49
25	8 50	16 34	12 30	3 59	13 5	3 57	5 34	28 8	35 10 21

1786.

June.

19

Day	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1				25 18	0 54	1 3	1 26	1 1	3 28
7	All day - light			25 39	0 55	1 3	1 23	1 12	2 49
13				25 20	0 56	1 3	1 21	1 22	1 52
19				25 1	0 57	1 4	1 18	1 30	0 45
25				24 42	0 57	1 4	1 15	1 36	0 23

M D	☉'s longitude	D's long.	D's latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.
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1	11 1	2 21	14 35	1 47	17 8	8 10	3 38	29 11	16 53
2	11 59	48	27 24	2 49	17 7	8 23	4 13	0 54	18 1
3	12 57	13	9 25	3 41	17 7	8 36	4 48	2 7	19 8
A 13	54	37	22 6	4 22	17 6	8 49	5 23	3 21	20 18
5	14 52	0	4 8	4 51	17 5	9 2	5 58	4 34	21 31
6	15 49	21	16 3	5 7	17 4	9 15	6 34	5 47	22 47
7	16 46	41	27 55	5 9	17 3	9 28	7 10	7 02	24 7
8	17 44	0	9 48	4 59	17 2	9 41	7 45	8 13	25 30
9	18 41	19	21 45	4 35	17 0	9 54	8 20	9 26	26 55
10	19 38	37	3 48	3 59	16 59	10 6	8 56	10 39	28 22
A 20	35	54	15 59	3 11	16 58	10 19	9 32	11 52	29 53
12	21 33	10	28 18	2 15	16 57	10 32	10 8	13 5	0 27
13	22 30	25	10 48	1 10	16 55	10 44	10 44	14 18	3 5
14	23 27	40	23 29	0 2	16 53	11 56	11 20	15 31	4 45
15	24 24	56	6 22	1 9	16 51	11 8	11 56	16 44	6 28
16	25 22	11	19 29	2 16	16 49	11 20	12 32	17 57	8 13
17	26 19	25	22 51	3 18	16 47	11 32	13 8	19 10	10 1
A 27	16	40	16 30	4 10	16 45	11 44	13 44	20 23	11 52
19	28 13	55	0 24	4 48	16 43	11 56	14 20	21 36	13 46
20	29 11	9	14 35	5 10	16 41	12 8	14 56	22 49	15 42
21	30 8	23	29 0	5 13	16 39	12 20	15 32	24 2	17 40
22	1 5	38	13 36	4 56	16 36	12 32	16 8	25 14	19 41
23	2 53	28	17 4	4 19	16 34	12 44	16 44	26 27	21 44
24	3 0	7	12 58	3 26	16 32	12 56	17 20	27 40	23 49
A 3	57	21	27 31	2 19	16 29	13 7	17 56	28 52	25 56
25	4 54	35	11 50	1 5	16 26	13 19	18 32	0 5	28 3
27	5 51	49	25 49	0 8	16 22	13 30	19 8	1 18	0 11
28	6 49	3	9 26	1 26	16 17	13 42	19 44	2 30	2 20
29	7 46	17	22 40	2 34	16 15	13 53	20 21	3 43	4 31
30	8 43	30	5 32	3 31	16 12	14 4	20 57	4 56	6 43

Day	u rises	δ sets	♀ sets	♂ rises	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	2 m 34	11 a 45	9 a 46	3 a 9	16 34	13 n 14	20 n 46	24 n 29	13 n 36
7	2 12	11 29	9 51	3 0	16 37	13 39	19 51	24 29	16 5
13	1 50	11 12	9 54	2 54	16 40	14 2	18 51	24 4	18 5
19	1 28	10 55	9 55	2 57	16 44	14 24	17 47	23 14	21 4
25	1 6	10 38	9 53	3 3	16 50	14 45	16 39	21 59	23 47

The LUNATIONS.

First quarter the 3d day, at 15 minutes past 10 morning,

Full Moon the 11th day, at 36 minutes past 10 morning,

Last quarter the 18th day, at 41 minutes past noon,

New Moon the 25th day, at 49 minutes past 8 morning.

M	Sundays & other	☉	☉	☉'s	D's	D rises	D	Clock
D	remark, days	rises	sets	declin.	declin.	& sets	South	bef. C
1		3 46	8 14	23 n 7	on 46	10 a 35	4 a 35	3 2
A 3	Sun. aft. Trin	Visitat.	8 14	23 3	4 s 34	10 48	5 16	3 3
3	Dog days begin	3 47	8 13	22 58	9 39	11 2	5 57	3 4
4	Transf. St. Mart.	Cam. Comm.	13 22	53 14	20 11	19 6	40 3	5
5	Trin. Term ends	3 48	8 12	22 47	18 27	11 39	7 24	4
6		3 49	8 11	22 41	21 51	morn	8 10	4 1
7	Tho. à Becket	Camb. T. ends	22 35	24 20	0 4	8 59	4 2	
8		3 50	8 10	22 28	25 45	0 38	9 51	4 3
A 4	Sun. aft. Trin.	3 51	8 9	22 21	25 55	1 24	10 44	4 4
10	Oxford Act	3 52	8 8	22 13	24 47	2 22	11 37	4 5
11		3 53	8 7	22 5	22 20	D rises	morn	5
12		3 54	8 6	21 57	18 41	8 a 44	0 29	5
13		3 55	8 5	21 48	14 3	9 3	1 19	5
14		3 56	8 4	21 39	8 40	9 20	2 8	5
15	Swithin	Oxf. T. ends	3 21	30 2	48 9	36 2	54 5	
A 5	Sun. aft. Trin.	3 58	8 2	21 20	3 n 16	9 51	3 44	5
17		3 59	8 1	21 10	9 15	10 10	4 32	5
18		4 0	8 0	21 0	14 47	10 30	5 22	5
19		4 1	7 59	20 49	19 34	10 57	6 15	5
20	Margaret	4 3	7 57	20 38	23 13	11 32	7 11	5
21		4 4	7 56	20 26	25 26	morn	8 10	5
22	Magdalen	4 5	7 55	20 14	25 59	0 22	9 11	5
A 6	Sun. aft. Trin.	4 7	7 53	20 2	24 5	1 26	10 12	6
24		4 8	7 52	19 49	22 10	2 53	11 12	6
25	St. James	4 9	7 51	19 36	18 16	D sets	0 a 6	6
26	St. Anne	4 11	7 49	19 23	13 31	8 a 7	0 55	6
27		4 12	7 48	19 10	8 15	8 24	1 42	6
28		4 14	7 46	18 56	2 45	8 39	2 26	6
29		4 15	7 45	18 42	2 s 43	8 52	3 8	6
A 7	Sun. aft. Trin	4 17	7 43	18 27	7 58	9 7	3 50	5
31		4 18	7 42	18 12	12 50	9 22	4 32	5
Days	Day	Length	Helioc.	Helioc.	Helioc.	Helioc.	Helioc.	Helioc.
	decreaf.	of day	long. ♀	long. ♀	long. ♂	long. ☉	long. ♀	long. ☿
1	0 6	16 28	12 41	4 11	3 15	4 3	15 19	6 17
7	0 12	16 22	12 53	5 4	18 21	15 24	25 3	11 25
13	0 24	16 10	13 4	5 37	21 0	21 7	4 46	11 10
19	0 36	15 58	13 15	6 42	23 39	26 5	14 27	5 43
25	0 52	15 42	13 26	6 10	26 19	2 35	4 7	26 29

1786.

July.

21

Clock
bef. C

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	All	day -	light	24 23	0 58	1 5	1 12	1 40	1 16
7				24 4	0 59	1 5	1 9	1 40	1 45
13				23 45	1 0	1 6	1 6	1 38	1 48
19				23 26	1 1	1 7	1 3	1 33	1 29
25				23 7	1 1	1 8	1 0	1 25	0 52
M	☉'s longitude			D's long.	h's latitude	u's long.	δ's long.	♀'s long.	♂'s long.
1	25 9	40 43	18 14	4 17	16 8	14 15	21 34	6 9	8 53
A	10	37 56	0 20	4 51	16 5	14 26	22 10	7 22	11 3
3	11	35 8	12 25	5 10	16 2	14 36	22 47	8 34	13 13
4	12	32 20	24 19	5 16	15 59	14 47	23 24	9 47	15 22
5	13	29 32	6 12	5 9	15 56	14 57	24 0	10 59	17 30
6	14	26 44	18 7	4 48	15 52	15 7	24 37	12 12	19 37
7	15	23 55	0 7	4 15	15 49	15 17	25 14	13 24	21 42
8	16	21 6	12 15	3 30	15 46	15 27	25 50	14 37	23 46
A	17	18 17	24 35	2 34	15 42	15 37	26 27	15 49	25 49
10	18	15 29	7 7	1 30	15 38	15 47	27 4	17 12	27 50
11	19	12 47	19 54	0 20	15 35	15 57	27 41	18 14	29 49
12	20	9 53	2 56	0 52	15 31	16 7	28 18	19 26	1 46
13	21	7 5	16 12	2 2	15 27	16 17	28 55	20 38	3 42
14	22	4 19	29 42	3 7	15 23	16 26	29 31	21 51	5 36
15	23	1 33	13 24	4 3	15 19	16 36	0 8	23 3	7 28
A	23	58 47	27 18	4 44	15 15	16 45	0 45	24 15	9 19
17	24	56 2	11 21	5 10	15 11	16 55	1 22	25 27	11 8
18	25	53 18	25 31	5 17	15 7	17 4	1 59	26 39	12 55
19	26	50 35	9 46	5 5	15 3	17 13	2 36	27 51	14 39
20	27	47 53	24 4	4 34	14 59	17 22	3 13	29 3	16 22
21	28	45 12	8 12	3 46	14 55	17 30	3 51	0 14	18 3
22	29	42 32	22 34	2 44	14 51	17 38	4 28	1 26	19 43
A	0	39 53	6 40	1 33	14 47	17 47	5 5	2 38	21 21
24	1	37 15	20 35	0 17	14 43	17 55	5 42	3 50	22 57
25	2	34 37	4 15	0 58	14 39	18 3	6 20	5 2	24 31
26	3	32 0	17 38	2 9	14 35	18 11	6 57	6 14	26 3
27	4	29 24	0 44	3 11	14 31	18 19	7 34	7 25	27 33
28	5	26 49	13 32	4 2	14 27	18 26	8 12	8 37	29 1
29	6	24 14	26 2	4 40	14 22	18 34	8 49	9 49	0 28
A	7	21 40	8 18	5 5	14 18	18 41	9 27	11 1	1 54
31	8	19 7	20 22	5 15	14 14	18 45	10 4	12 13	3 18
Days	u's rises	δ's sets	♀'s sets	♂'s sets	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	0 43	10 20	9 50	8 27	16 57	15 n 6	15 n 27	20 n 22	24 n 26
7	0 21	10 2	9 41	8 45	17 3	15 24	14 12	18 25	23 27
13	0 0	9 45	9 31	8 56	17 11	15 40	12 54	16 11	21 6
19	11 38	9 27	9 21	8 55	17 18	15 55	11 32	13 42	17 53
25	11 16	9 10	9 10	8 47	17 26	16 9	10 8	11 6	14 12

The LUNATIONS.

First quarter the 2d day, at 20 minutes past 3 morning,
 Full Moon the 9th day, at 46 minutes past 9 night,
 Last quarter the 16th day, at 12 minutes past 5 evening,
 New Moon the 23d day, at 24 minutes past 8 night,
 First quarter the 31st day, at 11 minutes past 9 night.

M	Sundays & other remark, days	☉ rises	☉ sets	☉'s declin.	D's declin.	D rises & sets	D South	Clock bef. ☉	
1	Lamma. day	4 20	7 40	17 n 57	17 s 10	9 a 41	5 a 16	5 54	
2		4 21	7 39	17 42	20 49	10 5	6 2	5 50	
3		4 23	7 37	17 26	23 37	10 35	6 51	5 45	
4		4 24	7 36	17 10	25 23	11 15	7 40	5 40	
5		4 26	7 34	16 54	25 59	morn	8 32	5 34	
A 6	Sun. aft. Trin.	Transfiguration		16 38	25 19	0 6	9 25	5 28	
7	Prs. Amelia bo.	Name of Jesus		16 21	23 19	1 11	10 18	5 21	
8		4 31	7 29	16 4	20 3	2 26	11 10	5 13	
9		4 33	7 27	15 47	15 41	D rises	morn	5 5	
10	St. Laurence	4 35	7 25	15 29	10 26	7 a 27	0 1	4 56	
11	Pr. Brunsw. bo.	Dogd. e.		7 24	15 11	4 34	0 51	4 41	
12	Pr. Wales born	4 38	7 22	14 53	1 n 36	7 59	1 40	4 37	
A 13	Sun. aft. Trin.	4 40	7 20	14 35	7 44	8 16	2 29	4 27	
14		4 42	7 18	14 16	13 30	8 37	3 20	4 16	
15	Assumption	4 43	7 17	13 58	18 31	9 3	4 13	4 4	
16	Pr. Fred. born	4 45	7 15	13 39	22 26	9 36	5 9	3 52	
17		4 47	7 13	13 20	24 59	10 20	6 7	3 40	
18		4 49	7 11	13 0	25 57	11 19	7 7	3 27	
19		4 50	7 10	12 41	25 16	morn	8 7	3 14	
A 20	S. aft. Trin.	4 52	7 8	12 21	23 5	0 29	9 5	3 0	
21	Pr. Wm. Hen. b.	4 54	7 6	12 1	19 37	1 50	10 1	2 46	
22		4 56	7 4	11 41	15 11	3 5	10 51	2 31	
23		4 58	7 2	11 20	10 7	D sets	11 39	2 16	
24	St. Bartholomew	5 0	7 0	11 0	4 44	6 a 49	0 a 24	2 0	
25		5 2	6 58	10 39	0 45	7 3	1 7	1 44	
26		5 3	6 57	10 18	6 6	7 18	1 49	1 28	
A 27	S. aft. Trin.	5 5	6 55	9 57	11 8	7 34	2 32	1 11	
28	St. Augustine	5 7	6 53	9 36	15 40	7 51	3 15	0 54	
29	Behead. J. Bap.	5 9	6 51	9 14	19 34	8 13	4 0	0 36	
30		5 11	6 49	8 53	22 39	8 40	4 48	0 18	
31		5 13	6 47	8 31	24 46	9 16	5 37	0 0	
☉	Day	Length	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ☉	Helioc. long. ☉	Helioc. long. ♀	H ₂ sets	
1	1 14	15 20	13 39	7 8 20	29 26	9 17	5 22	17 45	4 m 52
7	1 32	15 2	13 50	7 53	2 7	15 2	14 58	4 37	4 26
13	1 54	14 40	14 1	8 25	4 49	20 49	24 33	21 6	4 1
19	2 14	14 20	14 12	8 59	7 32	26 33	4 6	7 58	3 36
25	2 38	13 56	14 23	9 31	10 15	2 21	13 38	25 59	3 11

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August.

23

Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. (C's hode	h's latitude	u's latitude	δ's latitude	♀'s latitude	♂'s latitude
1	1 23	10 36	2 56	22 45	1 2	1 9	0 n 57	1 n 13	0 s 6
7	1 46	10 13	2 43	22 26	1 3	1 10	0 54	0 59	1 6
13	2 7	9 52	2 32	22 7	1 3	1 11	0 50	0 42	2 9
19	2 27	9 32	2 23	21 47	1 4	1 12	0 47	0 23	3 12
25	2 46	9 13	2 15	21 28	1 4	1 13	0 44	0 3	4 3
M D	☉'s longitude		D's long.	D's latitude	h's long.	u's long.	δ's long.	♀'s long.	♂'s long.
1	♌ 9	16 34	2 m 18	5 s 12	14 9	18 56	10 m 42	13 m 24	4 m 40
2	10	14 2	14 11	4 56	14 5	19 3	11 19	14 36	5 59
3	11	11 30	26 5	4 26	14 0	19 10	11 57	15 47	7 16
4	12	8 59	8 6	3 45	13 56	19 16	12 35	16 58	8 31
5	13	6 29	20 17	2 54	13 52	19 23	13 12	18 10	9 44
A	14	4 0	2 42	1 53	13 47	19 30	13 50	19 21	10 55
7	15	1 31	15 24	0 45	13 42	19 36	14 28	20 32	12 4
8	15	59 3	28 26	0 n 27	13 37	19 42	15 6	21 43	13 11
9	16	56 36	11 48	1 38	13 33	19 48	15 44	22 54	14 15
10	17	54 10	25 28	2 46	13 28	19 54	16 22	24 5	15 16
11	18	51 46	9 25	3 46	13 24	19 59	17 0	25 16	16 15
12	19	49 24	23 35	4 32	13 19	20 5	17 38	26 27	17 11
A	20	47 3	7 52	5 2	13 15	20 10	18 16	27 38	18 4
14	21	44 43	22 13	5 13	13 10	20 15	18 54	28 49	18 54
15	22	42 25	6 33	5 5	13 6	20 20	19 32	29 59	19 41
16	23	40 8	20 48	4 38	13 1	20 25	20 10	1 10	20 24
17	24	37 53	4 57	3 54	12 57	20 29	20 48	2 20	21 3
18	25	35 40	18 57	2 57	12 53	20 34	21 26	3 31	21 39
19	26	33 29	2 47	1 50	12 49	20 38	22 5	4 41	22 11
A	27	31 20	16 26	0 38	12 45	20 42	22 43	5 52	22 38
21	28	29 12	29 54	0 s 36	12 41	20 46	23 21	7 2	23 1
22	29	27 6	13 11	1 46	12 36	20 49	24 0	8 13	23 19
23	♌ 0	25 2	26 14	2 49	12 32	20 53	24 38	9 23	23 32
24	1	22 59	9 5	3 43	12 28	20 56	25 16	10 33	23 39
25	2	20 58	21 42	4 24	12 24	20 59	25 55	11 43	23 41
26	3	18 58	4 6	4 53	12 20	21 2	26 33	12 53	23 37
A	4	17 0	16 17	5 7	12 16	21 4	27 12	14 5	23 28
28	5	15 3	28 19	5 7	12 12	21 7	27 50	15 13	23 13
29	6	13 8	10 14	4 55	12 8	21 9	28 29	16 23	22 52
30	7	11 14	22 5	4 29	12 4	21 12	29 7	17 32	22 24
31	8	9 21	3 5	3 52	12 0	21 14	29 46	18 42	21 48
Days	☿ rises	♂ sets	♀ sets	♂ sets	h's declin.	u's declin.	δ's declin.	♀'s declin.	♂'s declin.
1	10 a 50	8 a 50	8 a 57	8 a 32	17 s 36	16 n 22	8 n 27	7 n 10	9 n 43
7	10 29	8 33	8 45	8 16	17 44	16 32	6 57	4 39	6 2
13	10 7	8 16	8 32	7 57	17 52	16 40	5 25	1 35	2 44
19	9 46	8 c	8 18	7 35	18 0	16 46	3 52	1 s 30	0 9
25	9 25	7 43	8 6	7 11	18 7	16 51	2 18	4 36	1 s 12

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September 1786

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Days	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	♂'s latitude	♀'s latitude	♂'s latitude
1	3 6	8 53	2 8	21 6	1 4	1 14	0 n 41	0 s 24	4 s 23
7	3 22	8 32	2 4	20 47	1 4	1 14	0 37	0 48	3 36
13	3 37	8 23	2 0	20 28	1 4	1 15	0 34	1 13	1 51
19	3 51	8 8	1 58	20 9	1 4	1 16	0 31	1 38	0 n 2
25	4 4	7 54	1 56	19 50	1 4	1 17	0 28	2 2	1 20
M D	☉'s longitude	☽'s long.	☽'s latitude	h's long.	u's long.	♂'s long.	♀'s long.	♂'s long.	♀'s long.
1	9 7 29	15 2 56	3 s 5	11 57	21 8 16	0 n 25	19 n 52	21 11 8	
2	10 5 38	28 5	2 8	11 53	21 18	1 4	21	20 23	
A	11 3 49	10 3 30	1 5	11 49	21 19	1 43	22 11	19 33	
4	12 2 2	23 16	0 n 4	11 46	21 20	2 22	23 20	18 37	
5	13 0 16	6 25	1 14	11 42	21 21	3 1	24 30	17 39	
6	13 58 32	20 0	2 22	11 38	21 21	3 40	25 30	16 40	
7	14 56 49	3 59	3 23	11 35	21 22	4 19	26 48	15 39	
8	15 55 8	18 20	4 14	11 32	21 22	4 58	27 57	14 40	
9	16 53 29	2 57	4 48	11 29	21 22	5 37	29 6	13 42	
A	17 51 52	17 42	5 4	11 26	21 22	6 16	0 m 14	12 46	
11	18 50 17	2 28	5 0	11 23	21 22	6 56	1 23	11 56	
12	19 48 44	17 6	4 36	11 20	21 22	7 35	2 32	11 12	
13	20 47 13	11 33	3 55	11 17	21 21	8 14	3 40	10 35	
14	21 45 45	15 43	3 0	11 14	21 21	8 53	4 48	10 6	
15	22 44 20	29 36	1 55	11 11	21 20	9 33	5 57	9 46	
16	23 42 57	15 13	0 45	11 9	21 19	10 12	7 5	9 34	
A	24 41 35	26 34	0 s 26	11 6	21 17	10 52	8 13	9 D 32	
18	25 40 15	9 42	1 34	11 3	21 15	11 31	9 21	9 41	
19	26 38 58	22 36	2 36	11 1	21 13	12 11	10 29	10 0	
20	27 37 44	5 20	3 40	10 58	21 11	12 50	11 36	10 28	
21	28 36 32	17 53	4 12	10 56	21 9	13 30	12 44	11 5	
22	29 35 21	0 1	4 42	10 54	21 6	14 9	13 51	11 50	
23	0 34 12	12 30	4 58	10 52	21 4	14 49	14 58	12 43	
A	1 33 6	24 35	5 1	10 50	21 1	15 29	16 5	13 44	
25	2 32 2	6 32	4 50	10 48	20 58	16 9	17 12	14 53	
26	3 30 59	18 24	4 27	10 46	20 55	16 49	18 10	16 8	
27	4 29 58	0 13	3 52	10 44	20 51	17 29	19 26	17 28	
28	5 28 59	12 3	3 7	10 43	20 48	18 9	20 32	18 52	
29	6 28 2	23 59	2 14	10 41	20 44	18 49	21 39	20 21	
30	7 27 6	6 4	1 14	10 39	20 40	19 29	22 46	21 54	
Days	u rites	♂ sets	♀ sets	♀ rites	h's declin.	u's declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	9 a 0	7 a 26	7 a 52	6 m 36	18 s 15	16 n 55	0 n 27	8 s 9	0 s 31
7	8 39	7 10	7 40	5 35	18 21	16 56	1 s 0	11 5	2 n 20
13	8 18	6 55	7 29	4 41	18 26	16 55	2 45	13 54	5 53
19	7 56	6 40	7 18	4 14	18 31	16 51	4 21	16 32	7 51
25	7 34	6 25	7 9	4 17	18 34	16 46	5 56	18 56	11

The LUNATIONS.

Full Moon the 7th day, at 5 afternoon,
 Last quarter the 14th day, at 54 minutes past 7 morning,
 New Moon the 22d day, at 15 minutes past 3 morning,
 First quarter the 30th day, at 18 minutes past 7 morning.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☾'s declin.	☾ rises & sets	☾ South	Clock aft. ☉
A	16 S. aft. Trin.	Remig	5 47	3 21	22 21	11 a 15	7 a 4	10 27
2		6 15	5 45	3 44	18 59	morn	7 54	10 45
3		6 17	5 43	4 8	14 36	0 32	8 44	11 4
4		6 19	5 41	4 31	9 19	1 52	9 33	11 22
5		6 21	5 39	4 54	3 25	3 15	10 23	11 40
6	Faith	6 23	5 37	5 17	2 n 50	4 39	11 14	11 57
7		6 25	5 35	5 40	9 5	☾ rises	morn	12 14
A	17 S. aft. Trin.	6 27	5 33	6 3	14 53	5 a 24	0 8	12 31
9	St. Denys	6 29	5 31	6 26	19 46	5 53	1 5	12 47
10	Ox & Cam. T. b.	6 31	5 29	6 49	23 19	6 33	2 5	13 3
11		6 33	5 27	7 11	25 13	7 25	3 8	13 18
12		6 35	5 25	7 34	25 23	8 30	4 11	13 32
13	Tr. K. Edward	6 37	5 23	7 56	23 54	9 43	5 12	13 47
14		6 39	5 21	8 19	21 2	11 3	6 9	14 0
A	18 S. aft. Trin.	6 41	5 19	8 41	17 8	morn	7 2	14 13
16		6 43	5 17	9 3	12 31	0 20	7 51	14 26
17	Etheldred	6 44	5 16	9 25	7 27	1 35	8 36	14 37
18	St. Luke	6 46	5 14	9 47	2 10	2 47	9 19	14 49
19		6 48	5 12	10 9	3 5	3 59	10 14	15 59
20		6 50	5 10	10 31	8 12	4 10	10 43	15 9
21		6 52	5 8	10 52	12 56	5 19	11 25	15 18
A	19 S. aft. Trin.	6 54	5 6	11 13	17 9	☾ sets	0 a 9	15 27
23		6 56	5 4	11 34	20 38	5 a 4	0 55	15 35
24		6 58	5 2	11 55	23 16	5 32	1 42	15 42
25	K. G. III. Acces.	Crispin	5 0	12 16	24 53	6 17	2 31	15 48
26	K. Geo. III. Pro.	7 2	4 58	12 37	25 23	7 0	3 21	15 54
27		7 3	4 57	12 57	24 43	7 59	4 12	15 59
28	St. Simon & Jude	7 5	4 55	13 17	22 53	9 6	5 2	16 3
A	20 S. aft. Trin.	7 7	4 53	13 37	19 57	10 18	5 51	16 7
30		7 9	4 51	13 57	16 11	11 34	6 39	16 10
31		7 11	4 49	14 16	11 13	morn	7 27	16 12
☉	Day decreas.	Length of day	Helioc. long. ♀	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♂	Helioc. long. ♀	h sets
1	5 C	11 34	15 32	12 8 52	27 23	8 26	12 9	0 22
7	5 24	11 10	15 43	13 24	0 20	14 21	21 38	1 25
13	5 48	10 46	15 55	13 57	3 13	20 18	1 8	2 6
19	6 10	10 24	16 6	14 29	6 8	26 16	10 38	3 57
25	6 34	10 0	16 17	15 2	9 5	28 15	20 9	5 8

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October.

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Day	Day lig. begins	Day lig. ends	Durat. twilig.	Pl. D's node	h's latitude	2's latitude	♂'s latitude	♀'s latitude	♂'s latitude
1	4 18	7 42	1 56	19 31	1 4	1 18	0 24	2 27	1 53
7	4 31	7 29	1 55	19 12	1 4	1 19	0 21	2 49	1 51
13	4 43	7 17	1 54	18 53	1 4	1 19	0 18	3 10	1 29
19	4 55	7 5	1 54	18 34	1 4	1 19	0 14	3 27	0 55
25	5 1	6 56	1 55	18 15	1 3	1 19	0 11	3 41	0 16
M	☉'s longitude		☽'s long.	☽'s latitude	h's long.	2's long.	♂'s long.	♀'s long.	♂'s long.
A	8 26	12	18 26	0 8	10 38	20 36	20 9	23 11	23 11
2	9 25	19	1 8	0 58	10 37	20 32	20 40	24 50	25 6
3	10 24	29	14 16	2 4	10 36	20 27	21 29	26 3	26 46
4	11 23	40	27 52	3 5	10 35	20 23	22 9	27 9	28 29
5	12 22	53	11 53	3 58	10 34	20 18	22 50	28 15	0 11
6	13 22	8	26 31	4 36	10 33	20 13	23 30	29 20	1 56
7	14 21	25	11 25	4 57	10 32	20 8	24 10	0 25	3 40
A	15 20	44	26 33	4 58	10 32	20 3	24 51	1 29	5 24
9	16 20	5	11 42	4 38	10 31	19 57	25 31	2 34	7 9
10	17 19	29	26 43	3 59	10 31	19 52	26 12	3 38	8 54
11	18 18	54	11 18	3 4	10 30	19 46	26 52	4 4	10 30
12	19 18	22	25 50	1 59	10 30	19 40	27 33	5 46	12 23
13	20 17	52	9 50	0 48	10 30	19 35	28 14	6 50	14 8
14	21 17	25	23 25	0 8	10 30	19 28	28 54	7 53	15 52
A	22 17	0	6 40	1 32	10 30	19 21	29 35	8 56	17 35
16	23 16	38	19 36	2 34	10 30	19 15	0 10	9 59	19 10
17	24 16	17	2 16	3 38	10 30	19 8	0 57	11 1	21 0
18	25 16	0	14 45	4 10	10 30	19 1	1 38	12 4	22 42
19	26 15	44	27 3	4 40	10 30	18 53	2 19	13 6	24 23
20	27 15	31	9 13	4 56	10 31	18 46	3 0	14 8	25 4
21	28 15	20	21 17	4 5	10 31	18 39	3 41	15 9	27 44
A	29 15	11	3 14	4 49	10 32	18 32	4 22	16 10	29 2
23	0 15	4	15 8	4 27	10 33	18 24	5 4	17 11	31 3
24	1 14	59	26 58	3 52	10 34	18 17	5 45	18 12	2 42
25	2 14	56	8 47	3 8	10 35	18 10	6 26	19 14	4 2
26	3 14	54	20 37	2 14	10 36	18 2	7 7	20 11	5 58
27	4 14	54	2 32	1 17	10 38	17 54	7 49	21 10	7 35
28	5 14	56	14 37	0 13	10 39	17 46	8 30	22 8	9 11
A	6 14	59	26 55	0 52	10 40	17 38	9 12	23 6	10 47
30	7 15	4	9 33	1 56	10 42	17 30	9 53	24 5	2 23
31	8 15	10	22 34	2 57	10 43	17 22	10 35	25 3	13 58
Days	2's rises	♂'s sets	♀'s sets	♂'s rises	h's declin.	2's declin.	♂'s declin.	♀'s declin.	♂'s declin.
1	7 a 13	6 a 9	7 a 0	4 m 42	18 37	16 n 4	7 s 31	21 s 8	4 n 19
7	6 49	5 44	6 54	5 21	18 39	16 34	9 3	23 1	0 15
13	6 25	5 29	6 50	6 0	18 39	16 23	10 35	24 36	4 s 13
19	6 1	5 14	6 47	6 37	18 39	16 11	12 4	25 49	8 57
25	5 37	5 0	6 46	7 18	18 37	16 0	13 3	26 42	12 44

The LUNATIONS.

Full Moon the 6th day, at 25 minutes past 2 morning,

Last quarter the 12th day, at 7 minutes past 8 night,

New Moon the 20th day, at 47 minutes past 9 night,

First quarter the 28th day, at 15 minutes past 9 night.

M	Sundays & other	☉	☾	☉'s	☾'s	☾ rises	☾	Clock
D	remark days	rises	sets	declin	declin.	& sets	South	aft. ☉
1	All Saints	7 13	4 47	14 30	5 34	om 53	8 a 15	16 13
2	Pr. Edw. born	7 14	4 46	14 55	on 12	2 14	9 3	16 14
3	Prs. Sophia born	7 16	4 44	15 14	6 20	3 35	9 54	16 14
4		7 18	4 42	15 32	12 18	5 2	10 49	16 12
5	S. aft. Trin. Powd. Pl.	7 19	4 40	15 50	17 37	6 31	11 48	16 11
6	Leonard. Mich. Term b.	7 20	4 39	16 18	21 50	☾ rises	morn	16 8
7	D. Cumb. born	7 23	4 37	16 26	24 29	5 a 14	0 51	16 4
8	Prs. Aug. Sop. b.	7 25	4 35	16 44	25 20	6 17	1 55	16 0
9	Ed. Mayor's day	7 26	4 34	17 02	24 22	7 28	3 0	15 55
10		7 28	4 32	17 18	21 49	8 49	4 1	15 48
11	St. Martin	7 30	4 30	17 34	18 4	10 8	4 52	15 41
12	S. aft. Trin.	7 32	4 28	17 51	13 32	11 26	5 48	15 34
13	Britius	7 33	4 27	18 7	8 30	morn	6 35	15 25
14		7 35	4 25	18 22	3 14	0 40	7 19	15 15
15	Machutus	7 36	4 24	18 38	2 1	1 51	8 0	15 5
16		7 38	4 22	18 53	7 8	3 1	8 42	14 53
17	Hugh.	7 39	4 21	19 8	11 54	4 0	9 23	14 41
18		7 41	4 19	19 22	16 12	5 18	10 6	14 28
19	S. aft. Trin.	7 42	4 18	19 36	19 51	6 27	10 50	14 14
20	Edmund	7 44	4 16	19 50	22 40	☾ sets	11 37	14 0
21		7 45	4 15	20 3	24 3	4 a 8	0 a 25	13 44
22	Cecilia. O. Mar.	7 47	4 14	20 16	25 15	4 54	1 15	13 28
23	St. Clement	7 48	4 12	20 28	24 50	5 49	2 5	13 11
24		7 49	4 11	20 40	23 15	6 55	2 55	12 53
25	D. Glouc. born.	7 50	4 10	20 52	20 35	8 5	3 44	12 34
26	S. aft. Trin.	7 52	4 8	21 4	16 56	9 18	4 37	12 15
27		7 53	4 7	21 15	12 27	10 32	5 17	11 55
28	Mic. Term end	7 54	4 6	21 25	7 13	11 48	6 2	11 34
29		7 55	4 5	21 35	1 42	morn	6 48	11 13
30	St. Andrew	7 56	4 4	21 45	4 n 10	1 6	7 36	10 51
Day	Length	Helioc.	Helioc.	Helioc.	Helioc.	Helioc.	Helioc.	h
decreas.	of day	long. ♀	long. ♀	long. ♂	long. ☉	long. ♀	long. ♂	sets
1	7 50	9 34	16 30	15 8	40 12	13 9	8 15	17 29
7	7 20	9 14	16 41	12 15	35 15	17 10	50 15	23 10
13	7 40	8 54	16 52	16 45	18 35	21 19	20 24	25 18
19	7 58	8 36	17 4	17 17	21 39	27 23	29 59	19 52
25	8 15	8 20	17 15	17 40	24 44	31 27	9 25	9 10

Day	Daylig. begins	Daylig. ends	Durat. twilig.	Pl. D's node	h's latitude	4's latitude	8's latitude	9's latitude	12's latitude
1	5 17	6 43	1 56	17 52	1 3	1 15	0 n 6	3 51	0 31
7	5 26	6 34	1 58	17 33	1 3	1 16	0 3	3 54	1 9
13	5 33	6 2	2 0	17 14	1 3	1 18	0 1	3 49	1 43
19	5 41	6 19	2 2	16 55	1 3	1 17	0 4	3 36	2 9
25	5 47	6 13	2 4	16 36	1 3	1 16	0 8	3 14	2 23
M D	☉'s longitude.	☽'s long.	☽'s latitude	h's long.	4's long.	8's long.	9's long.	12's long.	
1	m 9 15 19	6 3	3 n 50	10 45	17 8 14	11 m 16	26 1	15 m 32	
2	10 15 27	20 2	4 31	10 46	17 6 11	58 26	58 17	6	
3	11 15 39	4 32	4 57	10 48	16 58 12	40 27	54 13	40	
4	12 15 51	19 26	5 3	10 50	16 49 13	21 28	49 20	14	
A	13 16 5	4 39	4 49	10 52	16 41 14	3 29	44 21	47	
6	14 16 22	20 0	4 13	10 55	16 33 14	45 0	38 23	20	
7	15 16 39	5 17	3 20	10 58	16 25 15	27 1	32 24	53	
8	16 16 59	20 18	2 13	11 0	16 17 16	9 2	26 26	25	
9	17 17 21	4 58	0 59	11 3	16 9 16	51 3	19 27	57	
10	18 17 44	19 11	0 17	11 5	16 1 17	33 4	11 29	29	
11	19 18 10	2 56	1 29	11 8	15 33 18	15 5	2 1	0	
A	20 18 37	16 15	2 34	11 11	15 45 18	57 5	52 2	31	
13	21 19 6	29 10	3 30	11 14	15 37 19	39 6	41 4	2	
14	22 19 38	11 47	4 14	11 17	15 29 20	21 7	30 5	32	
15	23 20 11	24 8	4 45	11 20	15 21 21	3 8	18 7	2	
16	24 20 47	6 18	5 2	11 23	15 13 21	4 9	5 8	32	
17	25 21 24	18 20	5 6	11 26	15 5 22	28 9	51 10	1	
18	26 22 2	0 15	4 57	11 30	14 57 23	11 10	37 11	30	
A	27 22 43	12 8	4 34	11 33	14 49 23	53 11	22 12	58	
20	28 23 25	23 59	4 0	11 36	14 41 24	35 12	6 14	26	
21	29 24 9	5 49	3 15	11 40	14 33 25	18 12	41 15	54	
22	30 24 52	17 42	2 22	11 43	14 26 26	0 13	30 17	21	
23	1 25 40	29 37	1 22	11 47	14 18 26	43 14	10 18	47	
24	2 26 27	11 39	0 18	11 51	14 11 27	25 14	49 20	13	
25	3 27 15	23 49	0 n 48	11 55	14 4 28	8 15	26 21	38	
A	4 28 5	6 11	1 53	11 59	13 57 28	51 16	2 23	3	
27	5 28 55	18 49	2 54	12 3	13 50 29	34 16	37 24	26	
28	6 29 46	1 47	3 48	12 7	13 43 0	17 17	11 25	47	
29	7 30 38	15 9	4 31	12 12	13 36 1	0 17	43 27	7	
30	8 31 31	28 57	5 0	12 16	13 20 1	44 18	14 28	25	
Day	4's sets	8's sets	9's sets	12's sets	h's declin.	4's declin.	8's declin.	9's declin.	12's declin.
1	8 m 1	4 a 52	6 a 39	4 a 57	18 s 35	15 n 4	15 s 2	27 s 15	17 s 0
7	7 33	4 3	6 39	4 52	18 31	15 31	16 26	27 22	20 8
13	7 5	4 22	6 38	4 49	18 26	15 18	17 41	27 7	22 40
19	6 37	4 7	6 38	4 49	18 21	15 5	18 50	26 34	24 30
25	6 8	3 53	6 38	4 53	18 15	14 52	19 54	25 46	25 35

The LUNATIONS.

Full Moon the 5th day, at 33 minutes past noon,
 Last quarter the 12th day, at 55 minutes past 11 morning,
 New Moon the 20th day, at 49 minutes past 4 afternoon,
 First quarter the 28th day, at 20 minutes past 8 morning.

M D	Sundays & other remark. days	☉ rises	☉ sets	☉'s declin.	☽'s declin.	☽ rises & sets	☽ South	Clock aft. ☉
1		7 57	4 3	21 54	10 n c	2 m 27	8 a 27	10 28
2		7 58	4 2	22 3	5 27	3 52	9 22	10 5
3	A Advent Sunday	7 59	4 1	22 12	20 5	5 21	10 21	9 41
4		8 0	4 0	22 20	23 26	6 48	11 24	9 17
5		8 1	3 59	22 28	25 7	☽ rises	morn	8 52
6	Nicholas	8 2	3 58	22 35	24 55	4 a 52	0 29	8 26
7		8 3	3 57	22 42	22 56	6 12	1 33	8 0
8	Conception	8 3	3 57	22 48	19 31	7 36	2 33	7 34
9		8 4	3 56	22 54	15 3	8 57	3 28	7 6
10	A 3 S. in Advent	8 4	3 56	22 59	9 59	10 13	4 19	6 39
11		8 5	3 55	23 4	4 38	11 28	5 5	6 11
12		8 6	3 54	23 9	0 45	morn	5 48	5 43
13	Lucy	8 6	3 54	23 13	5 58	0 40	6 30	5 14
14		8 6	3 54	23 15	10 51	1 49	7 11	4 46
15		8 7	3 53	23 19	15 16	2 57	7 53	4 16
16	Camb. T. ends	O Sapi.	3 53	23 22	19 4	4 7	8 37	3 47
17	A 3 S. in Advent	8 7	3 53	23 24	22 5	5 15	9 23	3 17
18	Oxf. Term ends	8 8	3 52	23 26	24 10	6 19	10 10	2 47
19		8 8	3 52	23 27	25 11	7 19	10 59	2 17
20	Ember Week	8 8	3 52	23 28	25 2	☽ sets	11 49	1 47
21	St. Thomas	Shor. d.	3 52	23 28	23 4	4 a 32	0 a 39	1 17
22		8 8	3 52	23 28	21 13	5 43	1 29	0 47
23		8 8	3 52	23 27	17 44	6 56	2 17	0 17
24	A 4 S. in Advent	8 8	3 52	23 26	13 25	8 10	3 3	obe 14
25	Christmas day	8 7	3 53	23 24	8 26	9 24	3 48	0 44
26	St. Stephen	8 7	3 53	23 22	2 59	10 40	4 33	1 13
27	St. John	8 7	3 53	23 20	2 n 43	11 56	5 18	1 43
28	Innocents	8 6	3 54	23 17	8 24	morn	6 6	2 13
29		8 6	3 54	23 13	13 48	1 18	6 57	2 42
30		8 6	3 54	23 9	18 35	2 41	7 52	3 11
31	A Sun. aft. Crism.	Silvest.	3 55	23 5	22 19	4 5	8 51	3 40
Day decreas.		Length of day	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	Helioc. long. ♂	Helioc. long. ♀	H sets
1	8 28	8 6	17 26	18 8 21	17 15	9 11 32	19 8 12	1 X 20
7	8 39	7 54	17 37	18 54	1 15	38 28	50 27	34 8 32
13	8 46	7 48	17 48	19 20	4 12	21 44	8 11 30	29 0 8 8
19	8 50	7 44	18 0	19 59	7 26	27 51	18 10	5 11 2 7 45
25	oinc. 2	7 46	18 11	20 31	10 41	3 27 58	27 52	12 26 49 7 21

1786.

December.

31

Day	lig. begins	Day	lig. ends	Durat. twilig.	Pl. D's node	h's latitude	u's latitude	d's latitude	q's latitude	g's latitude
1	5 54	6 6	2 5	16	17	1 s 2	1 s 14	0 s 12	2 s 39	2 s 22
7	5 57	6 3	2 6	15	58	1 s 2	1 s 13	0 15	1 52	1 55
13	5 59	6 1	2 7	15	39	1 s 2	1 s 12	0 19	0 49	0 48
19	6 1	5 59	2 7	15	20	1 s 2	1 s 10	0 23	0 n 29	1 n 1
25	6 1	5 55	2 7	15	1	1 s 2	1 s 8	0 26	1 59	2 43

M D	O's longitude			D's long.		D's latitude		h's long.		u's long.		d's long.		q's long.		g's long.	
1	9	32	24	13	12	5 n	12	12	21	13	22	2	27	18	55	29	42
2	10	33	19	27	51	5	4	12	25	13	15	3	10	19	10	0	57
A	11	34	14	12	51	4	35	12	30	13	9	3	53	19	36	2	9
4	12	35	10	28	3	3	47	12	35	13	2	4	36	20	0	3	18
5	13	36	7	13	17	2	43	12	39	12	56	5	20	20	22	4	23
6	14	37	5	28	22	1	28	12	44	12	50	6	3	20	42	5	25
7	15	38	4	13	11	0	8	12	49	12	45	6	46	21	0	6	23
8	16	39	4	27	35	1 s	11	12	54	12	39	7	29	21	16	7	14
9	17	40	5	11	32	2	23	12	59	12	34	8	13	21	30	8	0
A	18	41	7	25	1	3	24	13	4	12	29	8	56	21	42	8	40
11	19	42	10	8	12	5	4	13	10	12	24	9	40	21	52	9	12
12	20	43	14	20	46	4	48	13	15	12	19	10	23	21	59	9	36
13	21	44	19	3	8	5	9	13	21	12	15	11	7	22	4	9	51
14	22	45	25	15	16	5	15	13	26	12	10	11	50	22	6	9	55
15	23	46	32	27	14	5	7	13	32	12	6	12	34	22	6	9	48
16	24	47	40	9	11	6	4	13	37	12	1	13	18	22	4	9	31
A	25	48	49	20	56	4	14	13	43	11	57	14	22	21	59	9	2
18	26	49	59	2	47	3	30	13	48	11	53	14	46	21	52	8	21
19	27	51	9	14	46	2	37	13	54	11	50	15	30	21	43	7	28
20	28	52	20	26	39	1	36	14	0	11	46	16	14	21	30	6	26
21	29	53	31	8	45	0	31	14	5	11	43	16	58	21	15	5	16
22	30	54	42	20	39	0 n	37	14	11	11	40	17	42	20	58	3	59
23	1	55	54	3	23	1	44	14	17	11	38	18	26	20	39	2	37
A	2	57	6	15	58	2	47	14	23	11	35	19	11	20	18	1	15
25	3	58	18	28	48	3	43	14	29	11	33	19	55	19	55	29	54
26	4	59	29	11	53	4	28	14	35	11	37	20	39	19	27	28	37
27	6	0	40	25	16	5	0	14	41	11	41	21	23	18	58	27	26
28	7	1	51	8	58	5	10	14	46	11	45	22	8	18	28	26	24
29	8	3	2	23	0	5	14	14	52	11	49	22	52	17	57	25	31
30	9	4	12	7	20	4	53	14	58	11	53	23	36	17	25	24	48
A	10	5	22	21	56	4	12	15	5	11	57	24	21	16	52	24	16

Days	u sets	d rises	q sets	g sets	h's declin.	u's declin.	d's declin.	q's declin.	g's declin.
1	5 m 39	7 m 20	6 a 33	5 a 1	18 s 7	14 n 41	20 s 52	24 s 47	25 s 50
7	5 18	7 16	6 16	5 8	17 59	14 31	21 43	23 40	25 13
13	4 41	7 13	5 58	5 8	17 50	14 24	22 27	22 28	23 54
19	4 12	7 9	5 40	4 43	17 40	14 18	23 3	21 14	22 15
25	3 42	7 6	5 22	3 51	17 30	14 14	23 31	20 12	20 45

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	JANUARY				FEBRUARY				MARCH				APRIL				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	2	50	3	7	3	34	3	49	2	37	2	57	3	4	3	5	1
2	3	23	3	40	4	5	4	22	3	18	3	33	4	15	4	4	2
3	3	57	4	14	4	41	5	1	3	50	4	5	5	6	5	3	3
4	4	31	4	49	5	23	5	46	4	28	4	51	6	0	6	31	4
5	5	8	5	28	6	11	6	37	5	11	5	34	7	1	7	3	5
6	5	49	6	11	6	59	7	44	6	2	6	33	8	9	8	37	6
7	6	35	7	4	8	21	9	1	7	4	7	39	9	12	9	44	7
8	7	34	8	6	9	39	10	17	8	14	8	52	10	13	10	41	8
9	8	40	9	18	10	55	11	31	9	28	10	4	11	9	11	35	9
10	9	55	10	34			12	4	10	38	11	8		0	0	0	10
11	11	12	11	51	0	33	0	59	11	39			0	24	0	46	11
12			0	26	1	24	1	50	0	8	0	34	1	8	1	29	12
13	0	58	1	27	2	15	2	34	0	57	1	19	1	50	2	11	13
14	1	54	2	21	2	50	3	7	1	40	2	2	2	32	2	50	14
15	2	46	3	5	3	21	3	34	2	22	2	40	3	6	3	21	15
16	3	21	3	36	3	40	3	59	2	55	3	11	3	30	3	51	16
17	3	49	4	1	4	10	4	25	3	25	3	38	4	6	4	25	17
18	4	14	4	28	4	42	4	58	3	49	4	4	4	45	5	5	18
19	4	45	5	0	5	16	5	34	4	20	4	38	5	26	5	55	19
20	5	16	5	32	5	56	6	21	4	57	5	16	6	16	6	43	20
21	5	51	6	13	6	48	7	15	5	38	6	3	7	12	7	42	21
22	6	37	7	0	7	44	8	18	6	30	6	57	8	15	8	46	22
23	7	26	7	53	8	54	9	31	7	27	8	0	9	19	9	52	23
24	8	22	8	54	10	8	10	44	8	35	9	10	10	24	10	57	24
25	9	28	10	3	11	19	11	53	9	46	10	20	11	29			25
26	10	40	11	16		0	25		10	53	11	26	0	1	0	30	26
27	11	51			0	56	1	24	11	58			1	0	1	28	27
28	0	23	0	53	1	51	2	15	0	30	1	1	1	58	2	28	28
29	1	23	1	51					1	27	1	50	2	53	3	14	29
30	2	18	2	42					2	16	2	42	3	34	3	54	30
31	3	2	3	18					3	4	3	22					31

This Table may serve the following Places, by adding

	h	m
For Tinmouth Haven, Hartle-pool, and Amsterdam	0	30
Brest	—	1 0
Scilly	—	1 45
Mount's Bay	—	1 55
Bridlington Pier and Humber	—	2 0

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	MAY				JUNE				JULY				AUGUST				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	4	16	4	40	5	27	5	48	5	28	5	46	6	4	6	28	1
2	5	2	5	25	6	11	6	34	6	6	6	28	6	51	7	17	2
3	5	50	6	17	6	57	7	19	6	49	7	12	7	45	8	15	3
4	6	44	7	12	7	43	8	9	7	37	8	3	8	46	9	21	4
5	7	39	8	8	8	35	9	2	8	30	9	0	9	55	10	30	5
6	8	36	9	5	9	29	9	58	9	33	10	2	11	4	11	38	6
7	9	33	10	1	10	25	10	52	10	34	11	4			0	10	7
8	10	27	10	52	11	21	11	50	11	37			0	39	1	8	8
9	11	18	11	43			0	17	0	10	0	40	1	34	2	1	9
10			0	8	0	44	1	10	1	7	1	35	2	26	2	47	10
11	0	32	0	56	1	36	2	2	2	2	2	27	3	5	3	21	11
12	1	19	1	43	2	29	2	51	2	49	3	7	3	36	3	51	12
13	2	6	2	29	3	8	3	26	3	23	3	38	4	6	4	21	13
14	2	49	2	7	3	43	3	59	3	54	4	10	4	45	5	4	14
15	3	24	3	41	4	14	4	33	4	27	4	45	5	26	5	52	15
16	3	56	4	14	4	52	5	11	5	4	5	23	6	21	6	50	16
17	4	33	4	52	5	30	5	52	5	44	6	8	7	23	7	55	17
18	5	13	5	35	6	14	6	38	6	34	7	1	8	38	9	16	18
19	5	57	6	22	7	4	7	32	7	32	8	5	9	58	10	36	19
20	6	48	7	13	8	2	8	34	8	42	9	20	11	12	11	48	20
21	7	40	8	9	9	8	8	43	10	2	10	41			0	21	21
22	8	40	9	13	10	21	10	59	11	20	11	58	0	53	1	15	22
23	9	47	10	20	11	38					0	33	1	41	2	4	23
24	10	54	11	29	0	14	0	49	1	6	1	36	2	26	2	45	24
25			0	4	1	23	1	54	2	5	2	31	3	2	3	15	25
26	0	37	1	8	2	24	2	51	2	51	3	7	3	30	3	42	26
27	1	40	2	12	3	12	3	30	3	24	3	38	3	55	4	8	27
28	2	40	3	5	3	47	4	2	3	52	4	5	4	23	4	42	28
29	3	27	3	45	4	19	4	36	4	20	4	36	4	59	5	16	29
30	4	5	4	24	4	53	5	10	4	52	5	8	5	35	5	59	30
31	4	45	5	7					5	25	5	44	6	22	6	50	31

Adding

h m

For Fowey, Loo and Plymouth	—	—	—	—	3	10
Dartmouth, Harborough and Hull	—	—	—	—	3	30
Torbay and Tinmouth	—	—	—	—	3	40
Exmouth, Topsham and Lime	—	—	—	—	3	50
Weymouth	—	—	—	—	4	20
Bridgewater and Texel	—	—	—	—	4	40
Portland and Hartlew	—	—	—	—	5	50

Time of High-Water at LONDON in the morning and afternoon of every day in the year.

Mo. Days	SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				Mo. Days
	morn.		aftern.		morn.		aftern.		morn.		aftern.		morn.		aftern.		
	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	
1	6	18	7	48	8	0	8	34	9	35	10	8	9	49	10	24	1
2	8	20	8	54	9	7	9	40	10	40	11	9	10	58	11	34	2
3	9	28	10	4	10	13	10	45	11	41					0	9	3
4	10	39	11	12	11	17	11	48	0	13	0	43	0	43	1	16	4
5	11	46					0	18	1	13	1	43	1	48	2	19	5
6	0	16	0	45	0	45	1	12	2	13	2	40	2	49	3	12	6
7	1	11	1	37	1	38	2	5	3	5	3	27	3	32	3	51	7
8	2	2	2	26	2	32	2	54	3	46	4	8	4	9	4	30	8
9	2	48	3	8	3	14	3	33	4	30	4	53	4	51	5	13	9
10	3	24	3	41	3	52	4	13	5	17	5	42	5	32	5	54	10
11	3	57	4	16	4	36	5	0	6	8	6	34	6	16	6	41	11
12	4	38	5	0	5	25	5	53	7	2	7	29	7	7	7	33	12
13	5	23	5	51	6	24	6	54	7	57	8	25	7	50	8	17	13
14	6	22	6	54	7	25	7	58	8	54	9	22	8	42	9	10	14
15	7	27	8	2	8	32	9	5	9	49	10	16	9	38	10	7	15
16	8	40	9	17	9	37	10	7	10	43	11	9	10	37	11	7	16
17	9	54	10	28	10	35	11	3	11	35			11	35			17
18	11	1	11	33	11	31	11	59	0	1	0	26	0	3	0	31	18
19			0	2			0	21	0	51	1	14	0	57	1	23	19
20	0	28	0	52	0	44	1	6	1	38	2	3	1	48	2	14	20
21	1	15	1	36	1	28	1	49	2	25	2	46	2	36	2	56	21
22	1	58	2	19	2	11	2	33	3	4	3	21	3	13	3	29	22
23	2	38	2	55	2	51	3	7	3	37	3	52	3	44	3	59	23
24	3	11	3	24	3	23	3	38	4	9	4	26	4	15	4	32	24
25	3	38	3	52	3	53	4	8	4	44	5	4	4	49	5	7	25
26	4	7	4	23	4	26	4	46	5	24	5	43	5	25	5	44	26
27	4	41	5	0	5	6	5	26	6	5	6	29	6	6	6	30	27
28	5	20	5	41	5	49	6	13	6	53	7	17	6	55	7	21	28
29	6	5	6	32	6	38	7	5	7	44	8	12	7	53	8	25	29
30	6	59	7	28	7	33	8	2	8	44	9	16	9	1	9	38	30
31					8	32	9	3					10	16	10	54	31

Subtracting

h m

For Leigh, Maes, and Gouries Gut	—	—	—	—	0	5
Gravesend, Rochester, and Rammekins	—	—	—	—	1	20
Buoy of the Nore and Flushing	—	—	—	—	1	30
Portsmouth, Ostend, Shoe-Bacon, and Red-Sand	—	—	—	—	2	0
Harwich, Dover, Spithead, and Calais	—	—	—	—	3	0
Gunfleet, Hastings, Shoreham, Orfordness, and Diep	—	—	—	—	4	0
Yarmouth Pier and Needle	—	—	—	—	4	40
St. Helen's and Havre-de-Grace	—	—	—	—	5	30

IN the course of this year there will happen five eclipses, viz. three of the Sun, and two of the Moon; but none of them will be visible here. They happen as follows:

January 14th, ☾ eclipsed, invisible.	d	h	m
Beginning — —	13	23	33
Middle — —	14	0	44
End — —	14	1	55

Digits eclipsed $4^{\circ} 47'$ on ☾'s south limb.

January 29th, ☉ eclipsed, invisible.—The ☿ at 14h. 38m. in longitude 10 fin. $10^{\circ} 29'$. The ☾'s latitude $42'$ north. The ☉ will be centrally eclipsed on the meridian at 15h. 15½m. in longitude $134^{\circ} 36'$ east, and latitude $32^{\circ} 15'$ north.

July 10th, ☾ eclipsed, invisible.	d	h	m
Beginning — —	10	20	56
Beginning of total darkness 0	22	21	
Middle — —	0	22	$40\frac{1}{2}'$
End of total darkness —	0	23	0
End — —	11	0	$24\frac{1}{2}$

Digits eclipsed $12^{\circ} 40'$.

July 24th, ☉ eclipsed, invisible.—The ☿ at 20h. 49m. in longitude 4 fin. $2^{\circ} 27'$. The ☾'s latitude $48\frac{2}{3}'$ south. The ☉ will be centrally eclipsed on the meridian at 21h. 11m. in longitude $42^{\circ} 17'$ east, and latitude $42^{\circ} 49'$ south.

December 20th, ☉ eclipsed, invisible.—The ☿ at 4h. 49m. in longitude 8 fin. $29^{\circ} 4'$. The ☾'s latitude $1^{\circ} 23'$ south.

There will also be a transit of the planet Mercury over the Sun on the morning of the 4th of May, viz. from a quarter after two till about eight, the particulars of which are as follows:

	h	m
Beginning, May 3d. —	14	15
Middle — —	16	57
End — —	19	38

The Eclipses of Jupiter's

JANUARY	FEBRUARY	MARCH	APRIL
Emerfions	Emerfions	Emerfions	The Eclipses of Jupiter's Satellites will not be vifible this month, Jupiter being too near the Sun.
1 13 47 50	2 10 19 51	2 18 5 2	
3 8 16 0	4 4 48 39	4 12 34 22	
5 2 44 12	5 23 17 30	6 7 3 43	
6 21 12 24	7 17 46 26	8 1 33 4	
8 15 40 40	9 12 15 20	9 20 2 27	
10 10 8 57	11 6 44 19	11 14 31 49	
12 4 37 17	13 1 13 18	13 9 1 12	
13 23 5 35	14 19 42 21	15 3 30 36	
15 17 34 1	16 14 11 26		
17 12 2 24	18 8 40 36		
19 6 30 51	20 3 9 41		
21 0 59 20	21 21 38 51		
22 19 27 54	23 16 8 2		
24 13 56 25	25 10 37 18		
26 8 25 2	27 5 6 31		
28 2 53 37	28 23 35 49		
29 21 22 21			
31 15 51 3			
MAY	JUNE	JULY	AUGUST
The Eclipses of Jupiter's Satellites will not be vifible this month, Jupiter being too near the Sun.	Immerfions	Immerfions	Immerfions
	2 17 7 15	1 0 38 21	1 21 8 11
	4 11 35 32	2 19 6 31	3 15 36 45
	6 6 3 49	4 13 34 42	5 10 5 21
	8 0 32 4	6 8 2 55	7 4 34 0
	9 19 0 19	8 2 31 9	8 23 2 39
	11 13 28 33	9 20 59 23	10 17 31 18
	13 7 56 47	11 15 27 36	12 12 0 0
	15 2 24 58	13 9 55 50	14 6 28 45
	16 20 53 8	15 4 24 6	16 0 57 30
	18 15 21 17	16 22 52 27	17 19 26 17
	20 9 49 25	18 17 20 43	19 13 55 6
	22 4 17 33	20 11 49 4	21 8 23 55
	23 22 45 41	22 6 17 27	23 2 52 47
	25 17 13 50	24 0 45 51	24 21 21 41
	27 11 42 0	25 19 14 16	26 15 50 35
	29 6 10 11	27 13 42 42	28 10 19 30
		29 8 11 10	30 4 48 26
		31 2 39 39	31 23 17 24

first Satellite for 1786.

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Immersions	Immersions	Immersions	Emersions
2 17 46 22	1 1 30 44	1 22 9 47	2 2 18 20
4 12 15 20	2 19 59 46	3 16 38 19	3 20 46 23
6 6 44 20	4 14 28 44	5 11 6 54	5 15 14 24
8 1 13 22	6 8 57 43	7 5 35 23	7 9 42 24
9 19 42 24	8 3 26 41	Emersions	9 4 10 24
11 14 11 25	9 21 55 40	9 2 11 27	10 22 38 22
13 8 40 29	11 16 24 35	10 20 39 52	12 17 6 19
15 3 9 31	13 10 53 29	12 15 8 17	14 11 34 15
16 21 38 34	15 5 22 24	14 9 36 37	16 6 2 11
18 16 7 36	16 23 51 16	16 4 4 57	18 0 30 7
20 10 36 39	18 18 20 5	17 22 33 14	19 18 58 4
22 5 5 41	20 12 48 56	19 17 1 29	21 13 26 2
23 23 34 42	22 7 17 39	21 11 29 43	23 7 54 0
25 18 3 43	24 1 46 27	23 5 57 53	25 2 21 58
27 12 32 44	25 20 15 9	25 0 26 3	26 20 49 56
29 7 1 44	27 14 43 54	26 18 54 9	28 15 17 54
	29 9 12 33	28 13 22 16	30 9 45 53
	31 3 41 9	30 7 50 22	

The Times of the Eclipses contained in this Table, are adapted to the Meridian of the Royal Observatory at Greenwich, and afford an excellent Method to discover the Longitude, or Difference of Meridians, between that and any other Place; which I shall illustrate by an EXAMPLE:

Suppose on the 12th Day of November of this Year, the Time of the Emersion of Jupiter's first Satellite be observed (by a Telescope) in an unknown Meridian, to happen at 16 h. 56 min. 37 sec. at night; I find by the Table, that the Time of this Emersion will happen at the British Observatory, at 15 h. 8 min. 17 sec. the same day: The Difference of the Times is 1 hour 48 min. 20 sec. which being converted into Degrees and Minutes of the Equator, will make 27 deg. 5 min. the Longitude of the Place of Observation, to the East, because the Time is more than that at the British Observatory.

Speculum Phænomenorum

JANUARY		FEBRUARY		MARCH	
1	♂ ♀ ☾ 2oh.	2	♂ ♀ ☾ 2oh.	2	♂ ♀ ☾ 14h.
1	♂ ☽ ☾ 3h.	5	♂ in ☽	6	♂ ☽ ☾ 16h.
1	♂ stationary	6	♂ ☽ ☾ 15h.	6	☐ ☉ ☽ 16h.
1	☾ in perigeo	10	☾ in apogeo	10	☾ in apogeo
2	♂ stationary	13	♀ in aphelio	18	♂ ☉ ☽ 3h.
2	♂ in perihelio	15	♂ in aphelio	19	☉ in ♀ 22h. 29m.
6	♂ ♀ ☾ 7h.	17	☉ in ☿ 22h. 3m.	21	♂ ☉ ♀ 9h.
8	♂ ☉ ☽ 2h.	25	☾ in perigeo	24	☾ in perigeo
9	♂ ☽ ☾ 21h.	26	♂ ♀ ☾ 4h.	25	♂ ♀ ☾ 17h.
12	♀ in ☽	26	♂ ☽ ☾ 23h.	26	♂ in ☽
13	☾ eclipsed, invifible	27	♂ ♀ ☾ 18h.	29	♂ ♀ ☾ 16h.
14	☾ in apogeo			30	♂ ♀ ☾ 1oh.
19	☉ in ☿ 7h. 12m.			30	♂ ☽ ☾ 9h.
20	♂ stationary			31	♂ in perihelio
26	☾ in perigeo				
26	♂ elong. max.				
27	♂ ☽ ☾ 15h.				
27	♂ ☉ ♀ 2h.				
28	♂ ♀ ☾ 16h.				
29	♂ ♀ ☾ 1oh.				
29	☉ eclipsed, invifible				
APRIL		MAY		JUNE	
4	♂ ☽ ☾ 1h.	2	♂ ☽ ☾ 13h.	6	♀ in perihelio
6	☾ in apogeo	3	♂ ☉ ☽ 16h. Transfit.	14	☾ in perigeo
13	♂ elong. max.	4	♀ in ☽	15	♂ ♀ ☾ 19h.
17	♂ ☉ ♀ 2h.	5	☾ in apogeo	20	☉ in ☿ 2oh. 29m.
19	☉ in ☽ 11h. 13m.	6	♀ in ☽	21	♂ ♀ ☾ 22h.
20	☾ in perigeo	6	☐ ☉ ♀ 19h.	22	♂ in ☽
22	♂ ♀ ☾ 6h.	14	♂ in aphelio	24	♂ ☽ ☾ 21h.
23	♂ stationary	16	♂ stationary	26	☾ in apogeo
27	♂ ♀ ☾ 7h.	18	☾ in perigeo	27	♂ ♀ ☾ 11h.
28	♂ ♀ ☾ 13h.	19	♂ ♀ ☾ 14h.	27	♂ in perihelio
28	♂ ☽ ☾ 1oh.	20	☉ in ♀ 11h. 48m.	28	♂ ☽ ☾ 2oh.
		25	♂ ♀ ☾ 4h.		
		25	♂ ☽ ☾ 13h.		
		27	♂ in aphelio		
		28	♂ ♀ ☾ 1oh.		
		28	♂ stationary		
		30	☾ in apogeo		
		31	♂ ☽ ☾ 3h.		
		31	♂ elong. max.		

ad Annum 1786.

JULY		AUGUST		SEPTEMBER	
1	♂ ☉ ♀ 16h.	5	♂ ☉ ♀ 17h.	3	☾ in perigeo
10	☾ eclipsed, invisible	7	☾ in perigeo	5	♂ ♀ ☾ 9h.
11	☾ in perigeo	9	♂ ♀ ☾ 4h.	7	♂ ☉ ♀ 8h.
12	♂ ♀ ☾ 23h.	10	♀ in aphelio	10	☾ stationary
19	♂ ♀ ☾ 12h.	10	♀ elong. max.	12	♂ ♀ ☾ 7h.
22	☉ in ♍ 7h. 19m.	12	☐ ☉ ♀ 7h.	16	☾ in apogeo
24	☾ in apogeo	15	♂ ♀ ☾ 23h.	17	♀ stationary
24	☉ eclipsed, invisible	20	☾ in apogeo	18	♀ in ☾
26	♂ ♀ ☾ 18h.	22	☉ in ♍ 13h. 38m.	20	♂ ♀ ☾ 10h.
27	♂ ♀ ☾ 14h.	25	♂ ♀ ☾ 9h.	22	☉ in ♌ 10h. 3m.
27	♂ ♀ ☾ 14h.	25	♂ ♀ ☾ 4h.	22	♀ elong. max.
31	♀ in ☾	25	♀ stationary	23	♂ ♀ ☾ 5h.
		25	♀ in ☾	23	♀ in perihelio
		26	♂ ♀ ☾ 19h.	26	♂ ♀ ☾ 0h.
				26	♀ in aphelio
OCTOBER		NOVEMBER.		DECEMBER.	
1	☾ in perigeo	2	☐ ☉ ♀ 13h.	3	♂ ♀ ☾ 0h.
2	♂ ♀ ☾ 18h.	5	♂ ♀ ☾ 19h.	5	♀ elong. max.
9	♂ ♀ ☾ 13h.	6	♀ in aphelio	7	☾ in apogeo
13	☾ in apogeo	7	♂ ☉ ♀ 13h.	14	♀ stationary
16	♀ stationary	8	♂ ☉ ♀ 0h.	15	♀ stationary
21	♂ ♀ ☾ 15h.	9	☾ in apogeo	15	♀ in ☾
21	♂ ☉ ♀ 19h.	10	♂ in ☾	16	♀ in ☾
22	♂ ♀ ☾ 3h.	20	♂ ♀ ☾ 1h.	19	♂ ♀ ☾ 2h.
22	☉ in ♍ 17h. 57m.	21	♂ ♀ ☾ 23h.	20	♂ ♀ ☾ 17h.
24	♀ elong. max.	21	☉ in ♌ 14h. 10m.	20	♀ in perihelio
26	♂ ♀ ☾ 0h.	24	♂ ♀ ☾ 7h.	20	☉ eclipsed, invisible
27	♀ in ☾	24	☾ in perigeo	21	☾ in perigeo
28	☾ in perigeo	26	♂ ♀ ☾ 11h.	21	☉ in ♌ 2h. 33m.
30	♂ ♀ ☾ 2h.			22	♂ ♀ ☾ 0h.
				23	♂ ♀ ☾ 21h.
				23	♂ ☉ ♀ 7h.
				30	♂ ♀ ☾ 7h.

A Table of the Sun's semi-diurnal Arches, or Times

The SUN's Declination North.

Degr.	Lat. 49		Lat. 50		Lat. 51		Lat. 52		Lat. 53		Lat. 54	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	6	8	6	8	6	8	6	9	6	9	6	9
2	6	12	6	13	6	13	6	14	6	14	6	15
3	6	17	6	18	6	18	6	19	6	19	6	20
4	6	22	6	22	6	22	6	24	6	25	6	25
5	6	26	6	27	6	27	6	29	6	30	6	31
6	6	31	6	32	6	33	6	34	6	36	6	37
7	6	36	6	37	6	38	6	40	6	41	6	43
8	6	41	6	42	6	43	6	45	6	47	6	48
9	6	45	6	47	6	48	6	50	6	52	6	54
10	6	50	6	52	6	54	6	56	6	58	7	0
11	6	55	6	57	6	59	7	1	7	3	7	6
12	7	0	7	2	7	4	7	7	7	9	7	12
13	7	5	7	7	7	10	7	12	7	15	7	18
14	7	10	7	13	7	15	7	18	7	21	7	24
15	7	15	7	18	7	21	7	24	7	27	7	31
16	7	21	7	24	7	27	7	30	7	33	7	37
17	7	26	7	29	7	33	7	36	7	40	7	44
18	7	31	7	35	7	38	7	42	7	46	7	51
19	7	37	7	41	7	45	7	49	7	53	7	58
20	7	43	7	47	7	51	7	55	8	0	8	5
21	7	49	7	53	7	57	8	2	8	7	8	12
22	7	55	7	59	8	4	8	9	8	14	8	20
23	8	1	8	6	8	11	8	16	8	22	8	28
24	8	7	8	12	8	18	8	24	8	30	8	36

By these Tables the Times of the Sun's Rising and Setting may be found, in any Part of the Kingdom of *Great-Britain* or *Ireland*, after the following Manner: Where the Latitude of the Place is known, take the Sun's Declination out of the Table, on the Noon of the Day you desire to know the Time of his Rising and Setting; and with it, according as it is either North or South, enter these Tables in the Left-

of his visible half Duration above the Horizon.

The Sun's Declination South.

Degt.	Lat. 49		Lat. 50		Lat. 51		Lat. 52		Lat. 53		Lat. 54	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	5	59	5	59	5	58	5	58	5	58	5	58
2	5	54	5	54	5	53	5	53	5	53	5	53
3	5	49	5	49	5	49	5	48	5	48	5	47
4	5	45	5	44	5	44	5	43	5	42	5	42
5	5	40	5	39	5	39	5	38	5	37	5	36
6	5	35	5	35	5	34	5	33	5	31	5	30
7	5	31	5	30	5	29	5	27	5	26	5	25
8	5	26	5	25	5	23	5	22	5	21	5	19
9	5	21	5	20	5	18	5	17	5	16	5	13
10	5	17	5	15	5	13	5	11	5	10	5	8
11	5	12	5	10	5	8	5	6	5	4	5	2
12	5	7	5	5	5	3	5	0	4	58	4	56
13	5	2	5	0	4	57	4	55	4	52	4	50
14	4	57	4	54	4	52	4	49	4	47	4	44
15	4	52	4	49	4	46	4	44	4	41	4	37
16	4	46	4	45	4	41	4	38	4	34	4	31
17	4	41	4	38	4	35	4	32	4	28	4	23
18	4	36	4	33	4	29	4	26	4	22	4	18
19	4	30	4	27	4	23	4	19	4	15	4	11
20	4	25	4	21	4	17	4	13	4	9	4	4
21	4	19	4	15	4	11	4	6	4	2	3	57
22	4	13	4	9	4	4	4	0	3	55	3	50
23	4	7	4	2	3	58	3	53	3	47	3	42
24	4	1	3	56	3	51	3	46	3	40	3	34

Left-hand Column, under the Word Degrees; then look the Latitude of the Place in the Top of the Table; and in that Column, against the Sun's Declination, will be found the Time of his visible half Duration above the Horizon, or Time of his Setting, correct by Refraction; then subtract the Time of his Setting from 12 Hours, the Remainder will be the Time of his Rising; double the Time of his Setting, the

A Table of the Sun's semi-diurnal Arches, or Times

The Sun's Declination North.

Degt.	Lat. 55		Lat. 56		Lat. 57		Lat. 58		Lat. 59		Lat. 60	
	h	m	h	m	h	m	h	m	h	m	h	m
0	6	4	6	4	6	4	6	4	6	4	6	4
1	6	9	6	10	6	10	6	10	6	11	6	11
2	6	15	6	16	6	16	6	17	6	17	6	18
3	6	21	6	22	6	22	6	23	6	24	6	25
4	6	27	6	28	6	29	6	30	6	31	6	32
5	6	32	6	34	6	35	6	36	6	38	6	39
6	6	38	6	40	6	41	6	43	6	44	6	46
7	6	44	6	46	6	48	6	49	6	51	6	53
8	6	50	6	52	6	54	6	56	6	58	7	1
9	6	56	6	58	7	1	7	3	7	5	7	8
10	7	2	7	5	7	7	7	10	7	13	7	16
11	7	8	7	10	7	14	7	17	7	20	7	23
12	7	15	7	18	7	21	7	24	7	27	7	31
13	7	21	7	24	7	28	7	31	7	35	7	39
14	7	28	7	31	7	35	7	39	7	43	7	47
15	7	34	7	39	7	42	7	46	7	51	7	56
16	7	41	7	45	7	49	7	54	7	59	8	4
17	7	48	7	52	7	57	8	1	8	7	8	13
18	7	55	8	0	8	5	8	10	8	16	8	22
19	8	2	8	7	8	13	8	19	8	25	8	32
20	8	10	8	15	8	21	8	28	8	35	8	42
21	8	18	8	24	8	30	8	37	8	45	8	53
22	8	26	8	32	8	39	8	47	8	55	9	4
23	8	34	8	41	8	49	8	57	9	6	9	16
24	8	43	8	51	8	59	9	8	9	18	9	29

the Sum will be the Length of the Day ; and double the Time of his Rising, the Sum will be the Length of the Night. But if the Latitude of the Place, and Declination of the Sun, consist of Degrees and Minutes, then a small Allowance must be made for the Minutes in both Cases, which may be done by a Person of an ordinary Capacity by a mental Proportion only. Thus, to find the Time of the Sun's Rising and Setting at

of his visible half Duration above the Horizon.

The Sun's Declination South.

Degr. 10	Lat. 55		Lat. 56		Lat. 57		Lat. 58		Lat. 59		Lat. 60	
	h	m	h	m	h	m	h	m	h	m	h	m
1	6	4	6	4	6	4	6	4	6	4	6	4
2	5	58	5	58	5	58	5	58	5	57	5	57
3	5	52	5	52	5	52	5	51	5	51	5	50
4	5	47	5	46	5	45	5	45	5	44	5	43
5	5	41	5	40	5	39	5	38	5	37	5	36
6	5	35	5	34	5	33	5	32	5	31	5	29
7	5	29	5	28	5	27	5	25	5	24	5	22
8	5	23	5	22	5	20	5	19	5	17	5	15
9	5	17	5	16	5	14	5	12	5	10	5	8
10	5	12	5	10	5	8	5	5	5	3	5	2
11	5	5	5	3	5	1	4	59	4	56	4	53
12	4	59	4	57	4	54	4	52	4	49	4	46
13	4	53	4	51	4	48	4	45	4	42	4	38
14	4	47	4	44	4	41	4	38	4	34	4	30
15	4	41	4	37	4	34	4	30	4	27	4	23
16	4	34	4	31	4	27	4	23	4	19	4	14
17	4	27	4	24	4	20	4	15	4	11	4	6
18	4	21	4	17	4	12	4	8	4	3	3	57
19	4	14	4	9	4	5	4	0	3	54	3	48
20	4	7	4	2	3	56	3	51	3	45	3	39
21	3	59	3	54	3	49	3	43	3	36	3	29
22	3	52	3	46	3	40	3	34	3	27	3	19
23	3	44	3	38	3	31	3	24	3	17	3	9
24	3	36	3	29	3	23	3	15	3	6	2	57
25	3	27	3	20	3	13	3	5	2	55	2	45

at Aberdeen in Scotland, on the Longest Day; the Latitude of that Place is accounted 57 Degr. 7 Min. North, and the Sun's Declination 23 Deg. 28 Min. likewise North. By these you will find by the Table, that 5 Min. for the Sun's Declination, and 1 Min. for the Latitude of the Place, are both, to be added to 8 Hours 49 Min. the Time belonging to 57 Degr. of Latitude and 23 Degr. of North Declination, and the Sum will be 8 Hours 55 Min. the Time of his apparent Setting at Aberdeen, on the longest Day, whose Complement to 12 Hours, viz. 3 Hours 5 Min. will be the Time of his Rising, &c.

A Table of the Sun's Right-Ascension in Time, the greatest

Degr.	♈			♉			♊			♋			♌			♍		
	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
0	0	0	0	1	51	37	3	51	15	6	0	0	8	8	45	10	8	23
1	0	3	40	1	55	27	3	55	25	6	4	22	8	12	54	10	12	12
2	0	7	20	1	59	17	3	59	36	6	8	43	8	17	3	10	16	0
3	0	11	0	2	3	8	4	3	48	6	13	5	8	21	11	10	19	48
4	0	14	41	2	6	59	4	8	0	6	17	26	8	25	19	10	23	35
5	0	18	21	2	10	51	4	12	13	6	21	48	8	29	26	10	27	22
6	0	22	2	2	14	44	4	16	26	6	26	9	8	33	31	10	31	8
7	0	25	42	2	18	37	4	20	40	6	30	30	8	37	37	10	34	54
8	0	29	23	2	22	31	4	24	55	6	34	51	8	41	41	10	38	40
9	0	33	4	2	26	25	4	29	10	6	39	11	8	45	45	10	42	25
10	0	36	45	2	30	20	4	33	26	6	43	31	8	49	48	10	46	9
11	0	40	26	2	34	16	4	37	42	6	47	51	8	53	51	10	49	53
12	0	44	8	2	38	13	4	41	59	6	52	11	8	57	52	10	53	37
13	0	47	50	2	42	10	4	46	16	6	56	31	9	1	53	10	57	20
14	0	51	32	2	46	8	4	50	34	7	0	50	9	5	53	11	1	3
15	0	55	14	2	50	7	4	54	52	7	5	8	9	9	53	11	4	46
16	0	58	5	2	54	7	4	59	10	7	9	26	9	13	52	11	8	28
17	1	2	40	2	58	7	5	3	29	7	13	44	9	17	50	11	12	10
18	1	6	23	3	2	8	5	7	49	7	18	1	9	21	47	11	15	52
19	1	10	7	3	6	9	5	12	9	7	22	18	9	25	44	11	19	34
20	1	13	51	3	10	12	5	16	29	7	26	34	9	29	40	11	23	15
21	1	17	35	3	14	15	5	20	49	7	30	50	9	33	35	11	26	56
22	1	21	20	3	18	19	5	25	9	7	35	5	9	37	29	11	30	37
23	1	25	6	3	22	23	5	29	30	7	39	20	9	41	23	11	34	18
24	1	28	52	3	26	29	5	33	51	7	43	34	9	45	16	11	37	58
25	1	32	38	3	30	35	5	38	12	7	47	47	9	49	9	11	41	39
26	1	36	25	3	34	41	5	42	34	7	52	0	9	53	1	11	45	19
27	1	40	12	3	38	49	5	46	55	7	56	12	9	56	52	11	49	0
28	1	44	0	3	42	57	5	51	17	8	0	24	10	0	43	11	52	40
29	1	47	48	3	47	6	5	55	38	8	4	35	10	4	33	11	56	20
30	1	51	37	3	51	15	6	0	0	8	8	45	10	8	23	12	0	0

The time of the southing or meridian transits of the fixed stars in pa. 46, may be found thus: On the noon of the day, preceding the night in which you want to know the time of the southing of any of those stars, find the Sun's place in the Ephemeris, and with it take out of the above table his right ascension in time; this you may do by inspection to a minute, which will be sufficient for your present purpose: Then from the right ascension of the star in pa. 46, subtract the right ascension of the Sun, the remainder will be the estimate time of the star's southing, and will not differ from the true time above 2 or 3 minutes at most, which may be near enough for ordinary uses. But when great exactness is required, reduce the Sun's place to his estimate time, and with it find in the above table his right ascension to seconds, which being subtracted from that of the star, the remainder will be the

Obliquity of the Ecliptic being $23^{\circ} 28'$.

Deg.	$\cap$			m			$\uparrow$			v			w			$\times$		
	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s	h	m	s
0	12	0	0	13	51	37	15	51	15	18	0	0	20	8	45	22	8	23
1	12	3	40	13	55	27	15	55	25	18	4	22	20	12	54	22	12	12
2	12	7	20	13	59	17	15	59	36	18	8	43	20	17	3	22	16	0
3	12	11	0	14	3	8	16	3	48	18	13	5	20	21	11	22	19	48
4	12	14	41	14	6	59	16	7	0	18	17	26	20	25	19	22	23	35
5	12	18	21	14	10	51	16	12	13	18	21	48	20	29	26	22	27	12
6	12	22	2	14	14	44	16	16	26	18	26	9	20	33	31	22	31	8
7	12	25	42	14	18	37	16	20	40	18	30	30	20	37	37	22	34	54
8	12	29	23	14	22	31	16	24	55	18	34	51	20	41	41	22	38	40
9	12	33	4	14	26	25	16	29	10	18	39	11	20	45	45	22	42	25
10	12	36	45	14	30	20	16	33	26	18	43	31	20	49	48	22	46	9
11	12	40	26	14	34	16	16	37	42	18	47	51	20	53	51	22	49	53
12	12	44	8	14	38	13	16	41	59	18	52	11	20	57	52	22	53	37
13	12	47	50	14	42	10	16	46	16	18	56	31	21	1	53	22	57	20
14	12	51	32	14	46	8	16	50	34	19	0	50	21	5	53	23	1	3
15	12	55	14	14	50	7	16	54	52	19	5	8	21	9	53	23	4	46
16	12	58	57	14	54	7	16	59	10	19	9	26	21	13	52	23	8	28
17	13	2	40	14	58	7	17	3	29	19	13	44	21	17	50	23	12	10
18	13	6	23	15	2	8	17	7	49	19	18	1	21	21	47	23	15	52
19	13	10	7	15	6	9	17	12	9	19	22	18	21	25	44	23	19	34
20	13	13	51	15	10	12	17	16	29	19	26	34	21	29	40	23	23	15
21	13	17	35	15	14	15	17	20	49	19	30	59	21	33	35	23	26	56
22	13	21	20	15	18	19	17	25	9	19	35	5	21	37	29	23	30	37
23	13	25	6	15	22	23	17	29	30	19	39	20	21	41	23	23	34	18
24	13	28	52	15	26	29	17	33	51	19	43	34	21	45	16	23	37	58
25	13	32	38	15	30	35	17	38	12	19	47	47	21	49	9	23	41	30
26	13	36	25	15	34	41	17	42	34	19	52	0	21	53	1	23	45	19
27	13	40	12	15	38	49	17	46	55	19	56	12	21	56	52	23	49	0
28	13	44	0	15	42	57	17	51	17	20	0	24	22	0	43	23	52	40
29	13	47	48	15	47	6	17	55	38	20	4	35	22	4	33	23	56	20
30	13	51	37	15	51	15	18	0	0	20	8	45	22	8	23	24	0	0

the true time of the star's culminating or southing. And if from the time of the star's southing you subtract the semidiurnal arc belonging to it, the remainder will be the time of the star's rising; and being added to it, the sum will be the time of its setting.

Annexed is an Ex. of SIRIUS for Jan. 31, 1784.

	$\odot$'s place at noon $\approx 11^{\circ} 53'$	h	m	s
Rt. Asc. of Sirius	-	6	35	33
$\odot$'s rt. asc. subtract	-	20	57	23
*'s estimate southing	-	9	38	10
$\odot$'s rt. asc. at that time sub.	-	20	58	12
*'s true southing	-	9	37	21
Semid. arc sub. & add	-	4	36	58
*'s rising aftern.	-	5	0	26
*'s setting	-	14	14	16

A Table of the mean Right-Ascensions in time, Semidurnal-Arcs, Declinations, and Magnitudes of 40 remarkable fixed Stars, with their Names, and Bayer's Literal Characters, for January 1, 1782.

Names of the Stars	Ch.	Rt. Asc.			Declination			Semid. Ar.			Ma
		h	m	s	o	'	"	h	m	s	
Pole star, Alruccabah -	α	0	48	3	88	8	36	n	fets	not	2
Andromeda's girdle, Mirach -	β	0	57	36	34	27	35	n	10	7	3 ²
Andromeda's left foot, Almach	γ	1	50	36	41	16	30	n	fets	not	2
Ram's following horn -	α	1	54	56	22	25	27	n	8	9	35
Whale's jaw, Menkar -	α	2	50	54	3	13	26	n	6	19	48
Medusa's head, Algol - -	β	2	54	4	40	6	6	n	fets	not	2
Perseus's right side, Algenib	α	3	8	51	49	4	11	n	fets	not	2
Brightest of the 7 stars -	η	3	34	34	23	25	2	n	8	16	40
Bull's south eye, Aldebaran	α	4	23	26	16	3	23	n	7	28	51
Auriga's left shoulder, Capella	α	5	0	37	45	44	59	n	fets	not	1
Orion's left foot, Rigel -	β	5	4	4	8	28	3	s	5	20	28
Bull's north horn - -	β	5	12	32	28	24	22	n	8	57	1
Orion's left shoulder, Bellatrix	γ	5	13	27	6	8	10	n	6	34	41
Orion's girdle - - -	ϵ	5	25	10	1	21	24	s	5	56	42
Orion's right shoulder, Betelgeuse	α	5	43	23	7	20	59	n	6	40	58
In the great Dog's mouth, Sirius	α	6	35	33	16	25	14	s	4	36	55
Head of the 1st Twin, Castor	α	7	20	41	32	20	54	n	9	38	21
In the left Dog's thigh, Procyon	α	7	27	54	5	46	41	n	6	32	50
Head of the 2d Twin, Pollux	β	7	31	59	28	32	14	n	8	58	13
Hydra's heart, Alphard -	α	9	16	53	7	43	21	s	5	24	20
Lyon's heart, Regulus -	α	9	56	45	13	1	32	n	7	11	28
Great Bear, Lower Pointer	β	10	48	34	57	32	47	n	fets	not	2
Great Bear, Upper Pointer -	α	10	50	8	62	55	27	n	fets	not	2
Lion's tail, Deneb - - -	β	11	37	56	15	47	28	n	7	27	18
Great Bear, 1st in the tail, Aliath	ϵ	12	44	22	57	8	46	n	fets	not	2
Virgus's spike - - -	α	13	13	44	10	1	2	s	5	12	20
Dragon's tail - - -	α	13	58	30	65	25	19	n	fets	not	2
Bootes, Arcturus - -	α	14	5	46	20	20	5	n	7	55	26
Libra, Southern Scale - -	α	14	38	52	15	7	26	s	4	44	23
Libra, Northern Scale - -	β	15	5	18	8	33	59	s	5	19	57
Bright star in the North Crown	α	15	25	28	27	27	35	n	8	48	36
Scorpion's heart, Antares	α	16	16	4	25	55	50	s	3	34	6
Hercules's head, Raf. Algethi	α	17	4	43	14	39	8	n	7	20	41
Head of Serpentarius - -	α	17	24	49	12	44	2	n	7	9	50
Dragon's head, Rastaben -	γ	17	51	34	51	31	19	n	fets	not	2
Bright star in the Harp, Lyra	α	18	29	33	38	35	19	n	fets	not	1
Bright star in the Eagle, Atair	α	19	40	8	8	18	10	n	6	45	57
Mouth of south Fish, Fomalhaut	α	22	45	34	30	46	17	s	2	52	6
Pegasus's wing, Markab -	α	22	53	55	14	2	8	n	7	17	10
Andromeda's head - - -	α	23	57	9	27	53	2	n	8	52	19

A Table of the Longitudes, Latitudes, and Magnitudes of the most remarkable fixed Stars that the Moon can Eclipse, or make a near Appulse unto; exactly rectified to the beginning of the year 1780.

Con.	Cha.	Long.	Lat.	Mag.	Con.	Cha.	Long.	Lat.	Mag.
		° ' "	° ' "				° ' "	° ' "	
♄	♄	♄ 11 4 48	2 9 44 n	4	♄	♄ 12 1 6	0 21 48 n	2	
	♄	14 28 2	1 5 37 n	4	♄	12 17 56 14	1 49 14 s	3	
	♄	16 48 2	0 13 11 s	4	♄	22 3 46	4 24 41 n	3	
♄	♄	♄ 17 46 21	1 48 7 n	4	♄	24 18 10	4 2 52 n	4	
	♄	26 55 21	4 1 36 n	3	♄	24 41 24	0 1 1 n	4	
♄	♄	♄ 2 43 37	5 45 30 s	3	♄	26 47 49	3 29 24 n	4	
	♄	5 23 14	2 35 37 s	3	♄	27 24 23	0 6 53 n	4	
	♄	6 42 57	5 29 2 s	1	♄	29 30 5	1 57 17 s	3	
	♄	19 30 14	5 21 59 n	2	♄	29 52 12	5 26 15 s	3	
	♄	21 42 52	2 13 29 s	3	♄	♄ 0 7 10	1 2 18 n	2	
♄	♄	♄ 0 22 14	0 55 4 s	4	♄	1 34 27	1 39 52 n	4	
	♄	2 13 39	0 50 34 s	3	♄	4 43 50	4 0 23 s	4	
	♄	5 1 5	6 46 12 s	2	♄	6 41 35	4 32 17 s	1	
	♄	6 52 7	2 2 28 n	3	♄	8 23 10	6 5 21 s	4	
	♄	15 27 6	0 12 19 s	3	♄	28 11 40	6 56 48 s	3	
	♄	20 11 11	6 40 4 n	1	♄	♄ 0 8 35	2 22 24 n	4	
♄	♄	♄ 4 28 28	3 10 22 n	4	♄	3 15 8	2 5 31 s	4	
	♄	5 38 46	0 4 13 n	4	♄	7 6 25	3 55 22 s	3	
♄	♄	♄ 18 35 0	3 1 57 s	4	♄	9 18 54	3 24 55 s	3	
	♄	21 11 15	3 46 1 s	4	♄	11 46 9	5 2 33 s	3	
	♄	24 50 0	4 51 9 n	4	♄	11 55 13	0 53 36 n	3	
	♄	26 46 26	0 27 27 n	1	♄	13 10 58	1 28 7 n	4	
	♄	♄ 3 19 2	0 8 29 n	4	♄	♄ 0 58 32	4 36 46 n	3	
	♄	18 26 24	0 31 21 s	4	♄	17 7 37	4 57 31 s	4	
	♄	21 58 0	3 2 51 s	4	♄	18 42 30	2 32 6 s	4	
♄	♄	♄ 24 2 24	0 41 36 n	3	♄	20 27 42	2 33 40 s	3	
	♄	♄ 0 17 47	5 4 42 n	3	♄	25 38 54	2 3 47 s	4	
	♄	1 45 53	1 22 24 n	3	♄	♄ 0 11 19	2 43 22 n	4	
	♄	7 6 18	2 48 57 n	3	♄	8 30 20	0 22 57 s	4	
	♄	20 46 27	2 2 11 s	1	♄	14 4 16	1 2 8 s	4	

This table shewing the mean longitudes of 60 stars to the beginning of the year 1780, their mean longitudes for any other time may be found if $50\frac{1}{2}$ seconds be added for each succeeding, and subtracted for each preceding year, and proportionably for a part of a year. Thus, to find the longitude of the first star ♄ δ, or δ piscium, for Feb. 15, 1782, or 2 years and one eighth after the tabular time; here $2\frac{1}{8}$ times $50\frac{1}{2}$ sec. make $1' 47''$, which being added to the tabular longitude, gives ♄ 11° 6' 35" for the longitude required at the given time.—The latitudes vary not.

The Latitudes and Longitudes of Ninety Places.

	Lat.	Long.		Lat.	Long.
	° /	° /		° /	° /
Alexandria, Egypt	31 11 n	30 17 e	Isfahan	32 25 n	52 55 e
Amsterdam, Hol.	52 23 n	4 52 e	Land's end	50 6 n	5 50 w
Archangel, Ruf.	64 34 n	38 30 e	Leghorn	43 33 n	10 25 e
Athens	37 40 n	23 52 e	Leostoff	52 38 n	1 54 e
Babelmandel	12 50 n	43 50 e	Leverpool	53 22 n	3 10 w
Batavia	6 12 s	106 45 e	Lima	12 1 s	76 50 w
Bengal	22 0 n	92 45 e	Lisbon	38 42 n	9 4 w
Berlin	52 33 n	13 26 e	Lizard	49 57 n	5 21 w
Bombay Isle	19 42 n	73 3 e	London	51 31 n	0 0
Boston, Amer.	42 25 n	70 37 w	Madras	13 8 n	80 7 e
Bresslau	51 3 n	17 13 e	Madrid	40 25 n	3 45 w
Brest	48 23 n	4 30 w	Manila	14 30 n	120 25 e
Bristol	51 28 n	2 30 w	Marseilles	43 18 n	5 21 e
Buenos Ayres	34 35 s	58 0 w	Mexico	19 54 n	100 5 w
Cadiz	36 31 n	6 7 w	Mississipi, mouth	29 0 n	89 17 w
Calais	50 58 n	1 51 e	Moscow	55 25 n	37 51 e
Cairo, Egypt	30 2 n	31 26 e	Naples	40 51 n	14 19 e
Cambridge	52 13 n	0 4 e	Newcastle	55 0 n	1 18 w
Canaria Islands	28 1 n	15 0 w	Oporto	40 53 n	8 35 w
Canton	23 8 n	113 2 e	Orkney I. northend	59 24 n	3 23 w
Cape of Goodhope	34 29 s	18 23 e	Oxford	51 45 n	1 16 w
Cape Horn	55 59 s	67 26 w	Paris	48 50 n	2 25 e
Carthegena	10 27 n	75 26 w	Pekin	39 55 n	116 22 e
Charles Town Am.	33 22 n	79 50 w	Petersburg	59 56 n	30 19 e
Constantinople	41 0 n	28 53 e	Philadelphia	39 57 n	75 18 w
Copenhagen	55 41 n	12 50 e	Plymouth	50 24 n	4 15 w
Corinth	37 30 n	23 0 e	Port Mahon	39 51 n	3 53 e
Corke	51 54 n	8 30 w	Port Royal, Jam.	17 40 n	76 37 w
Dantzic	54 22 n	18 36 e	Portsmouth	50 48 n	1 1 w
Dover	51 7 n	1 19 e	Prague	50 5 n	14 15 e
Dublin	53 12 n	6 55 w	Quebec	46 55 n	71 12 w
Edinburgh	55 58 n	3 1 w	Rome	41 54 n	12 32 e
Ferro, Isle	27 48 n	18 6 w	Scilly Isles	50 0 n	6 45 w
Finistierre, Cape	42 57 n	9 36 w	Smyrna	38 28 n	27 25 e
Genoa	44 25 n	8 41 e	Stockholm	59 22 n	18 12 e
Gibraltar	36 5 n	4 46 w	Syracuse	37 4 n	15 20 e
Glasgow	55 52 n	4 5 w	Tangier	35 55 n	5 45 w
Goa	15 31 n	73 50 e	Teneriff	28 16 n	16 32 w
Göttingen	51 32 n	9 58 e	Tunis	36 47 n	10 16 e
Greenwich	51 29 n	0 5 e	Turin	45 5 n	7 45 e
Hackitt's Head.	79 55 n	12 0 e	Venice	45 27 n	12 24 e
Halifax, America	44 46 n	63 20 w	Verd. Cape	14 47 n	17 28 w
Havanna	23 12 n	81 11 w	Vienna	48 11 n	16 28 e
Helena, I. St.	15 55 s	5 49 w	Upsal	59 52 n	17 43 e
Jerusalem	31 50 n	35 25 e	Uraniberg	55 54 n	12 52 e

Name		Address		Occupation	
John	Smith	123	456	Farmer	
James	Johnson	789	101	Teacher	
William	Brown	234	567	Merchant	
Robert	Wilson	890	123	Physician	
Thomas	Miller	345	678	Blacksmith	
Charles	Davis	901	234	Lawyer	
Henry	Garcia	567	890	Engineer	
George	Lee	123	456	Miner	
Edward	White	789	101	Farmer	
Frank	Harris	234	567	Teacher	
Albert	Clark	890	123	Merchant	
Joseph	Young	345	678	Physician	
Samuel	King	901	234	Blacksmith	
David	Wright	567	890	Lawyer	
Richard	Scott	123	456	Engineer	
Christopher	Green	789	101	Miner	
Andrew	Baker	234	567	Farmer	
Matthew	Adams	890	123	Teacher	
Patrick	Nelson	345	678	Merchant	
John	Peter	901	234	Physician	
James	Reed	567	890	Blacksmith	
William	Stewart	123	456	Lawyer	
Robert	Thomas	789	101	Engineer	
Thomas	Ward	234	567	Miner	
Charles	Young	890	123	Farmer	
Henry	Allen	345	678	Teacher	
George	King	901	234	Merchant	
Edward	Wright	567	890	Physician	
Frank	Scott	123	456	Blacksmith	
Albert	Green	789	101	Lawyer	
Joseph	Baker	234	567	Engineer	
Samuel	Adams	890	123	Miner	
David	Nelson	345	678	Farmer	
Richard	Peter	901	234	Teacher	
Christopher	Reed	567	890	Merchant	
Andrew	Stewart	123	456	Physician	
Matthew	Thomas	789	101	Blacksmith	
Patrick	Ward	234	567	Lawyer	
John	Young	890	123	Engineer	
James	Allen	345	678	Miner	
William	King	901	234	Farmer	
Robert	Wright	567	890	Teacher	
Thomas	Scott	123	456	Merchant	
Charles	Green	789	101	Physician	
Henry	Baker	234	567	Blacksmith	
George	Adams	890	123	Lawyer	
Edward	Nelson	345	678	Engineer	
Frank	Peter	901	234	Miner	
Albert	Reed	567	890	Farmer	
Joseph	Stewart	123	456	Teacher	
Samuel	Thomas	789	101	Merchant	
David	Ward	234	567	Physician	
Richard	Young	890	123	Blacksmith	
Christopher	Allen	345	678	Lawyer	
Andrew	King	901	234	Engineer	
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Patrick	Scott	123	456	Farmer	
John	Green	789	101	Teacher	
James	Baker	234	567	Merchant	
William	Adams	890	123	Physician	
Robert	Nelson	345	678	Blacksmith	
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Charles	Reed	567	890	Engineer	
Henry	Stewart	123	456	Miner	
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William	Scott	123	456	Merchant	
Robert	Green	789	101	Physician	
Thomas	Baker	234	567	Blacksmith	
Charles	Adams	890	123	Lawyer	
Henry	Nelson	345	678	Engineer	
George	Peter	901	234	Miner	
Edward	Reed	567	890	Farmer	
Frank	Stewart	123	456	Teacher	
Albert	Thomas	789	101	Merchant	
Joseph	Ward	234	567	Physician	
Samuel	Young	890	123	Blacksmith	
David	Allen	345	678	Lawyer	
Richard	King	901	234	Engineer	
Christopher	Wright	567	890	Miner	
Andrew	Scott	123	456	Farmer	
Matthew	Green	789	101	Teacher	
Patrick	Baker	234	567	Merchant	
John	Adams	890	123	Physician	
James	Nelson	345	678	Blacksmith	
William	Peter	901	234	Lawyer	
Robert	Reed	567	890	Engineer	
Thomas	Stewart	123	456	Miner	
Charles	Thomas	789	101	Farmer	
Henry	Ward	234	567	Teacher	
George	Young	890	123	Merchant	
Edward	Allen	345	678	Physician	
Frank	King	901	234	Blacksmith	
Albert	Wright	567	890	Lawyer	
Joseph	Scott	123	456	Engineer	
Samuel	Green	789	101	Miner	
David	Baker	234	567	Farmer	
Richard	Adams	890	123	Teacher	
Christopher	Nelson	345	678	Merchant	
Andrew	Peter	901	234	Physician	
Matthew	Reed	567	890	Blacksmith	
Patrick	Stewart	123	456	Lawyer	
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James	Ward	234	567	Miner	
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